



TOGETHER
for a sustainable future

OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.



TOGETHER
for a sustainable future

DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

FAIR USE POLICY

Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

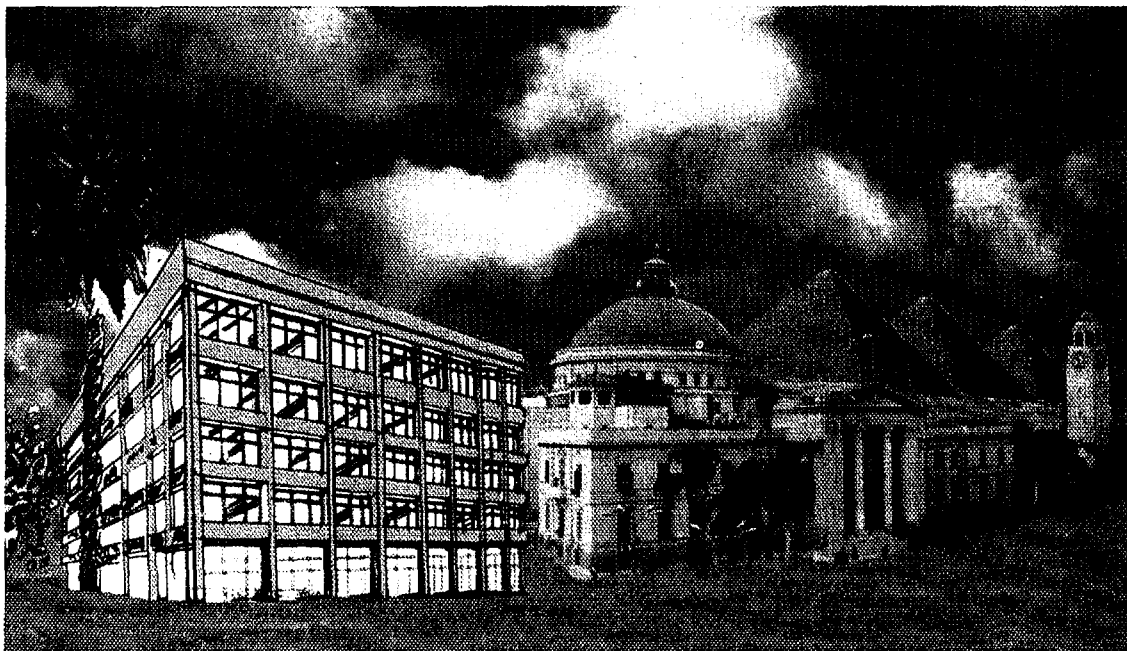
22192

NATIONAL INSTITUTE OF LASER ENHANCED SCIENCE

N.I.L.E.S-3



**Training Course On Laser Science
And its Applied Technology
Cairo, 9 – 21 November 1998**



Final Programme

**Cairo University
Cairo, Egypt**



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION



INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY

ICS TRAINING COURSE AND WORKSHOP
Training Course on
“LASER SCIENCE AND ITS APPLIED TECHNOLOGY”
(9-21 Nov. 1998)

By

Final Report

Synopsis

Prof. Yehia A. Badr

Coordinator

National Institute of Laser Enhanced Sciences (NILES)

Cairo University

Giza, Egypt

Tel:+202-5708480 Fax:+202-5729499

Ybadr@main-LSR.Cairo.eun.eg

Ybadr@Hotmail.com

A training course on “Laser Science and its Applied technology” 9-21 November 1998 including all the theoretical and experimental aspects under the sponsorship and coordination of ICS/UNIDO, was organized in Cairo – Egypt with thirty participants from Arabic, African and Asian countries as well as thirty participants from Egypt.

The course was designed to allocate 40 participants only, but due to interest shown by several industrial organization, hospitals and universities in the middle east and often referring to ICS/UNIDO the number of participants coming from Arabic, African and Asian countries increased to cover participants from Palestine, Jordan, Syria, Iraq, Yemen, Saudi Arabia, Qatar, Vietnam, Sudan, Libya, Tunis, Algeria, Morocco, Senegal, and Cote de Voire with the same share of budget approved by the ICS/UNIDO.

The National Institute of Laser Enhanced Sciences (NILES) gave a support as counter part to ICS/UNIDO subcontract (equal sharing).

A large number of lecturers and invited speaker from various countries gave their contributions to the present activity.

The total number of lectures was 98 hours organized as follows:

4 General lectures per group x 4	16h
6 Specialized lectures per group x4	24h
8 advanced topics	8h
18 Invited lectures in the period 14 th to 16 th Nov.	18h
8 hrs group discussion per group	32h
<hr/>	
	98h
20 hrs practical session per group	80h

98 hrs of classes and 80 hrs of practical sessions with the participation of 50 lecturers and professors among them. 23 invited professors and 27 Egyptians. Moreover, the period from 14th to 16th of Nov. 1998, the participants were able to attend the "Third International Conference on Laser Science & Applications" where 80 recent papers have been presented. Several workshops have been organized during the training course especially in the field of laser applications in Medicine (E.N.T. workshop) and industry.

On the first week (9th to 14th Nov.) the lectures were mostly general for the 4 groups of participants covering Introductory Lecture on:

- Lasers I & II and Laser Safety.
- Lasers in Photochemistry & Photobiology.
- Lasers in Optical-Fiber Communication.
- Lasers in Remote Sensing.
- Lasers Tissue interaction.
- Advances in High Power Lasers.
- Types of Laser Systems.
- In addition to 4 advanced topics.

Moreover 15 hrs of practical sessions supporting the above mentioned concepts and basic principles of laser and its applications in different fields.

In the period from 14th to 16th a sum of 18 primary lectures and 80 scientific papers were discussed.

In the last week 18th to 20th, all the lectures and practical sessions were highly specialized and consequently the participants were splinted into 4 groups.

- 1- Laser systems for physicians.
- 2- Laser Engineering for Engineers.
- 3- Laser in Metrology, Environment, Agriculture.
- 4- Laser in Medicine & Biology.

Each group consisted of about 15 participants.

The practical sessions during this week were designed to cover most of the recent applications in each field.

The theoretical work was combined with the practical sessions in such a way that the theoretical material given in the morning was covered by more than one practical application relaying on our facilities at NILES in the afternoon session.

Generally, the training course was a successful one. Most of the people attending this course, participants and professors expressed their satisfaction and admire. We hope that this training course will be an annual meeting covering certain topic each year.

Table of Contents:

- 1- Introduction.
- 2- Objectives.
- 3- Locations of the Training Course and Choice of Institution.
- 4- Partnership and join ventures that provided additional support to the training course.
- 5- Programmatic structure of the course.
- 6- Course evaluation.
- 7- Conclusions and recommendations.



Prof. Yehia A. Badr

National Institute of Laser Enhanced Sciences (NILES)

Cairo University

Giza, Egypt

Tel: +202-5708480 Fax: +202-5729499

Ybadr@main-LSR.Cairo.eun.eg

Ybadr@Hotmail.com

BUDGET
ICS TRAINING COURSE ON
"Laser Science and its Applied Technology"
Cairo, Egypt, 9-21 November 1998

40 PARTICIPANTS (20 National + 20 International)

Travel

- 20 international participants x 1,000\$ average air ticket= 20,000US\$
- 20 international participants x 12 days x 35\$ daily living expenses)=8,400 US\$

6 RESOURCES PEOPLE

Travel

- 6 lecturers x 1,200\$ average air ticket 7,200US\$

BOARD AND LODGING

- 6 lecturers x 7 days x 100\$ daily living expenses= 4,200US\$

MISCELLANEOUS 200US\$

TOTAL ICS CONTRIBUTIONS 40,000US\$

CONTRIBUTION FROM CAIRO UNIVERSITY 32,000 US\$

TOTAL COST OF TRAINING COURSE 72,000US\$

Agreed!
Bach J.A.

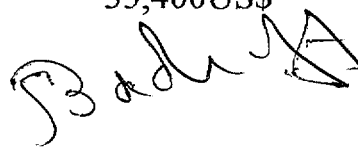
REAL COST

8 PROFESSORS 18 PROFESSORS	COVERED BY ICS COVERED BY NILES	
Prof. M. El-Sayed	USA	1550
Prof. H. El-Sayed	USA	1550
Prof. L. El-Nadi	Qatar	1000
Prof. H.J. Kunze	Germany	1000
Prof. Jai P. Mittal	India	800
Prof. Sayed A. Ahmed	India	800
Prof. Bandrauc	Canada	1550
Prof. Boudreau	Canada	1550
TRAVEL EXPENSES		9800US\$
BOARD AND LODGING		
8 lecturers x 7 days x 100\$ daily living expenses=		5600US\$
TRAVEL		
• 20 international participants x 1,000\$ average air ticket=		20,000US\$
• 20 international participants x12 daysx35\$ daily living expenses)=		8,400US\$
MISCELLANEOUS		200us\$
TOTAL NILES CONTRIBUTIONS		44,000US\$

Additional financial contribution of Niles :

15 professors Ticket	15,000US\$
Accommodation	10,500US\$
10 Participants ticket (addition 10 international participants)	10,000US\$
Accommodation (addition 10 international participants)	4,200US\$
Miscellaneous	200US\$

35,400US\$



Cost Breakdown of Cairo University Financial Contribution:

1	Abstract book + lectures + block notes + conference brief cases for participants and lecturers.	5500\$
2	Salaries & related allowances for lecturers	2500\$ 25 hrs/lectures 2000\$ 20 hrs/practical 4500\$
3	Meals 13 days	6500\$
4	Preparing suitable meeting room (1) Lecture halls (5)	5000\$
5	Preparing labs workshops with required scientific instruments and required materials.	10000\$
6	Administrative & secretarial support + MIS	2000\$
7	Internal Transportation	2000\$
8	Additional & invited professors by NILES (7-16) - Transportation - Accommodation	6x1200=7200\$ 6x7x100=4200\$
9	Social activities	2000\$
Total		48900\$

* One dye kit for Laser operation

10000\$

Table of Contents:

- 1- Introduction.
- 2- Objectives.
- 3- Locations of the Training Course and Choice of Institution.
- 4- Partnership and joint ventures that provided additional support to the training course.
- 5- Programmatic structure of the course.
- 6- Course evaluation.
- 7- Conclusions and recommendations.

Badr Y.A.

Prof. Yehia A. Badr

National Institute of Laser Enhanced Sciences (NILES)

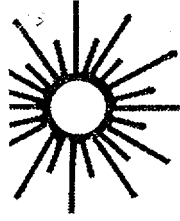
Cairo University

Giza, Egypt

Tel: +202-5708480 Fax: +202-5729499

Ybadr@main-LSR.Cairo.eun.eg

Ybadr@Hotmail.com



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

المعهد القومي لعلوم الليزر

مكتب العميد

DEAN'S OFFICE

Proposal for Training Course
The National Institute of Laser Enhanced Science
Cairo University
Proposed to
Hold a Training Course Entitled:
“Laser Science and its Applied Technology”
During (Nov. 1998)

Organizer:

National Institute of Laser Enhanced Sciences
Cairo University – Egypt

Introduction:

Extensive modern laser laboratory facilities have been introduced at Cairo University in 1994 with highly sophisticated equipment and laser sources to establish the National Institute of Laser Enhanced Sciences (NILES).

The available facilities enable staff members and postgraduate student to be engaged in the development of laser research relevant to a variety of problems and situations in both basic science and applications such as medical, industrial, environmental, agriculture and communications.

Therefore the National Institute of Laser Enhanced Sciences proposed to hold a training course with the above-mentioned title. The topics to be treated in this course cover a wide range of laser applications such as medical, environmental, agriculture, industrial and communications. Industrial applications represent the main field of interest during the course and will include: getting introduced to the different types of lasers used in industry, latest developments in laser applications in computer technology, optical communications, optical inspection of industrial products, non-destructive testing of materials, laser machining, material processing ... etc

Objectives:

- ◆ To provide state of the art knowledge of lasers and their applications in the field of engineering and technology, medical sciences, remote sensing, environment, industry, agriculture and communications.
- ◆ To introduce students to present and future advance in laser applications in a different research disciplines.
- ◆ To provide hands on experience on a variety of laser sources and its accessories to young participants involved in industry, engineering, technology and medicine ... etc
- ◆ To promote networking of relevant workers and institutions.

Scientific Program:

The proposed period of this training course is 10 working days and will consist of:

1- Lectures

Approximately 25 hours of lectures covering the following topics will be offered to all participants:

- Basic Laser Physics.
- Laser Based Machining: Methods and Technology.
- Laser Applications in Industry.
- Laser Applications in Communications.
- Medical Applications of Laser.
- Laser Applications in Remote Sensing.
- Application of Laser in Environment.
- Laser Applications in Agriculture.

2- Laboratory Work:

20 Hours laboratory sessions covering the above mentioned topics.

Participation:

The expected number of participants is about 40 among which at least 20 Non-Egyptians. The training course is relevant to physicists, engineers, technicians, and chemists, biologists and medical doctors whose professional training did not include lasers and their applications. Those who are already familiar with laser equipment will benefit from the latest information presented in this course in laser applications.

Local Organizing Committee (from NILES)

Coordinator:

Y.A. Badr

Members:

L.M. El-Nadi	Y.E. Gamal
M.H. Abd-El Kader	A.M. El-Nadi
M.H. Al-Batanony	M.M. Sabry
M.S. Shafik	

CO-Sponsors:

Cairo University will cover the cost of tuition fees, printed materials and meals. Moreover invited lecturers will be offered free lodging and meals.

Languages:

English

Coordinator

Badr J.A.

CONTRACT NO. 98/214

COPY CONTRACTOR

between

THE UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

located at

Vienna International Center

Wagramerstrasse 5, P.O. Box 300, A-1400 Vienna, Austria

Telephone: 21131, Telex: 131218 pac a, Fax: 21131 6815

and the

NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES (N.I.L.E.S.)

located at

Cairo University

Giza, Egypt

for the

provision of services relating to the

Training Course on

"LASER SCIENCE AND ITS APPLIED TECHNOLOGY"


9 - 21 November 1998, Giza, Egypt

UNIDO Project No.: TF/GLO/96/105

Purchase Order No.: 15-8-1214X

VK/IR

27 August 1998



1. **Contractor's Responsibilities**

In accordance with the terms and conditions stated herein and in the Annexes hereto the **NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES (N.I.L.E.S.), EGYPT**, hereinafter referred to as "The Contractor", shall provide for the full and proper performance of its obligations under this Contract, all the services described in the Terms of Reference dated 17 August 1998. A copy of the Terms of Reference is attached hereto as Annex B and made a part hereof. All work required under this Contract shall be completed no later than 31 December 1998.

2. **Contract Price and Payment**

UNIDO shall pay the Contractor for the full and proper performance of all obligations hereunder the sum of United States Dollars forty thousand (US\$ 40,000). This sum shall cover all expenses incurred by the Contractor including, but not limited to, salaries, indemnities, social charges, overheads, technical assistance and supervision costs. The Contractor shall not do any work which may result in any charges to UNIDO over and above the sum of United States Dollars forty thousand (US\$ 40,000) without prior written consent of UNIDO and a formal amendment to this Contract.

It is understood that, in case the actual number of the participants is smaller than stated in the Terms of Reference, the Contract price shall be adjusted accordingly.

3. **Entry into Effect of the Contract**

This Contract shall be deemed to be effective from the date of its signature by both Parties.

4. **Reports**

The Contractor shall submit to UNIDO, Vienna, a Final Report in English, in five (5) copies each, covering the work done in accordance with paragraph 1, including a Financial Statement of expenses incurred, not later than 31 December 1998.

The Report shall be prepared in accordance with the "Basic Principles of Scientific Report Writing" (Annex C) and dispatched according to the "Instructions to Contractors for the Dispatch of Reports" (Annex D).

17/2

5. **Payments**

Payment on account of the Contract price set forth in paragraph 2. hereinbefore shall be made on the basis of the Contractor's invoice sent to UNIDO Vienna, as follows:

- a) upon signature of the Contract by both Parties,
the sum of US\$ 32,000

 - b) upon UNIDO's receipt and acceptance of the Final Report
as referred to in paragraph 4. hereinabove,
the sum of US\$ 8,000
- TOTAL US\$ 40,000

The Contractor shall pay at his own cost all the taxes, assessments, liens and charges which fall due and be payable by the Contractor as a result of this Contract.

The making of any payment hereunder by UNIDO shall not be construed as an unconditional acceptance by UNIDO of the work accomplished by the Contractor up to the time of such payment.

All payments under this Contract shall be made, subject to receipt by UNIDO of the Contractor's invoice in one (1) original and one (1) copy, by electronic transfer to the accounts indicated in the invoice.

6. **Transmission of Reports, Invoices and Notices**

All reports, invoices and notices submitted or given hereunder shall be addressed to the Purchase and Contracts Section, General Services Branch, Administrative and Financial Control, Field Operations and Administration Division, Wagramerstr. 5, P.O.Box 300, A-1400 Vienna, Austria.

7. **Contract Amendment**

No modification of, or change in, this Contract, or waiver of any of its provisions, or additional contractual relationship with the Contractor shall be valid unless approved in

the form of a written amendment to this Contract, signed by the Contractor and the UNIDO, Officer-in-Charge, Purchase and Contracts Section, General Services Branch, Administrative and Financial Control, Field Operations and Administration Division, or his representative.

8. Covenant against Contingent Fees


The Contractor warrants that:

- a) no person or selling agency has been employed or retained by him to solicit or secure this Contract upon an agreement or understanding for a commission, percentage, brokerage, contingent fee or retainer, except regular employees or bona fide and officially established commercial or selling agencies maintained by the Contractor for the purpose of securing business;
- b) no official or servant or retired employee of UNIDO, the United Nations, the UNDP and the Participating and Executing Agencies of the UNDP or the Government and/or its co-operating Agency(ies), who is not a bona fide employee of the Contractor, has been or shall be admitted by the Contractor to any direct or indirect benefit arising from this Contract or the award thereof.

For breach of these warranties, UNIDO shall have the right to deduct from the Contract price, or otherwise recover from the Contractor, the full amount of any such commission, percentage, brokerage, contingent fee or retainer so paid.

9. Default by the Contractor

In case the Contractor fails to fulfil his obligations and responsibilities under this Contract, and provided the Contractor has not remedied such failure(s) within thirty (30) days of having been given UNIDO's express written notification of the nature of the failure(s), UNIDO may, at its sole option and without prejudice to its right to withhold payment(s) as hereinbefore provided, hold the Contractor in default under this Contract. When the Contractor is thus in default, UNIDO may, by giving written notice to the Contractor, terminate the Contract as a whole or such part or parts thereof in respect of which the Contractor is in default. Upon such notice, UNIDO shall have the right to seek



completion, at the Contractor's expense, of that part or those parts of the Contract with respect to which the Contractor is in default. The Contractor shall, in this case, be solely responsible for any reasonable costs of completion, including such costs which are incurred by UNIDO over and above the originally agreed Contract price stipulated hereinbefore.

10. General Conditions

The Parties hereto agree to be bound by the UNIDO General Conditions of Contract a copy of which is attached hereto as Annex A.

IN WITNESS WHEREOF, the Parties hereto have executed this Contract.

**NATIONAL INSTITUTE OF LASER
ENHANCED SCIENCES (N.I.L.E.S.)**

By..... *Badr. Y. A.*

Cairo University
Giza
Egypt

Date *30.08.1998*

**UNITED NATIONS INDUSTRIAL
DEVELOPMENT ORGANIZATION**

By..... *[Signature]*

V. Koloskov
Contracts Officer
Purchase and Contracts Section
General Services Branch
Administrative and Financial Control
Field Operations and Administration Div.
P.O.Box 300
A-1400 Vienna
Austria

Date *28.08.1998*

Enclosures

- Annex A : General Conditions of Contract
- Annex B : Terms of Reference dated 17 August 1998
- Annex C : Basic Principles of Scientific Report Writing
- Annex D : Instructions to Contractors for the Dispatch of Reports

AC

TERMS OF REFERENCE OF THE SUBCONTRACT
for the

ICS TRAINING COURSE ON

"Laser Science and its Applied Technology"

Cairo, Egypt, 9 – 21 November 1998

1. Purpose of the Subcontract

The subcontract is requested for the organization of a Training Course on "Laser Science and its Applied Technology".

The contents of the course will deal with a wide range of laser applications such as medical, industrial, environmental, agriculture and communications. Industrial applications represent the main field of interest during the course and will include: getting introduced to the different types of lasers used in industry, latest developments in laser application in computer technology, optical communications, optical inspection of industrial products, non-destructive testing of materials, laser machining, material processing etc.

The implementation of the activity will be subcontracted to a local counterpart who will bear the hereunder stated responsibilities.

2. Duties and Responsibility for the Subcontractor

- Finalize in cooperation with the ICS Coordinator, the Project Document, the Aide-Mémoire, the announcement and the programme/agenda of the Training Course.
- Ensure that the Resource Persons provide written copies of their contributions in order to prepare the Final Report of the event.
- Identify suitable candidates for participation in the Training Course and prepare a list (bearing in mind that at least 50% of the participants should be coming from the industrial sector) to be submitted to the ICS Coordinator for the final selection.
- Provide all administrative and secretarial support for the organization and execution of the event.
- Prepare and organize all travel and logistics arrangements for both Resource Persons and participants in the Training Course (travel tickets, boarding, lodging, local transportation, etc.)
- Prepare, for the duration of the Training Course, suitable meeting rooms, lecture halls and laboratories with the required scientific equipment.
- In cooperation and consultation with the ICS Coordinator, he will be responsible for the carrying out of the programme according to the approved agenda.

- Evaluate, under the responsibility of the ICS Coordinator, the activities of the Training Course and the profile of the invited participants.
- Prepare, within one month after the completion of the Training Course, a comprehensive report of the event.
- Prepare a comprehensive package of all written contributions presented at the Training Course, including, overheads, case studies, examples (possibly in soft format).
- Provide recommendations and suggestions on how to improve the quality and cost-effectiveness of the events ICS-UNIDO intends to carry out in its future programme.

3. Estimated Budget

US\$ 40,000 will be made available by ICS-UNIDO to be spent as follows:
(see attached budget)

Please note that the budget which has been allocated to this activity must in no way be increased. Furthermore, under each itemized expenditure within the budget, no more than 10% excess can occur with obvious adjustments to other items to keep within the total.

4. Dates of the Subcontract

From July to December 1998

5. Various

For any additional detail or information on the TC, please refer to the herewith attached Aide-Mémoire.

signed by:

Mr. Francesco Pizzio
ICS Managing Director

Badr. YA

Prof. Y. A. Badr
Dean of NILES
Local organizer & scientific coordinator

Prof. G. Denardo
ICS High Technology Area Coordinator

**Under the patronage of
Prof. Farouk Ismail
President of Cairo University**

ICS – UNIDO

**International Centre for Science and
High Technology, ICS-UNIDO
(Trieste, Italy) and The National
Institute of Laser Enhanced
Science, Cairo University**

Organize

**A Training Course on
Laser Science and its Applied
Technology**

**Cairo University
9-21 Nov. 1998**

Site And Date

The training course on Laser Science and its applied technology will be held at NILES, November 9-21, 1998, in the beautiful environment of Cairo University, Egypt.

Sponsorship

This meeting is jointly sponsored by the ICS-UNIDO (Trieste, Italy) and the National Institute of Laser Enhanced Science, Cairo University, Egypt.

Aim of the Course

The laser area is that most likely to dominate technology in the 21st century. This training course aims therefore at providing state-of-the-art knowledge of Lasers and its applications.

- Provide state-of-the-art knowledge of lasers and their applications in the fields of engineering and technology, medical sciences, remote sensing, environment, industry, agriculture and communication.
- Introduce students to present and prospective advances in laser applications in various research disciplines.
- Provide hands-on experience on a variety of laser sources and their accessories to young participants involved in industry, engineering, technology and medicine, etc.
- Promote networking of relevant workers and institutions.

Who Should Attend?

Laser scientists, technicians and engineers in academic institutions and industry, environmental specialists; biological scientists, R&D scientists, technologists and engineers working in industries and those involved in hygiene and agricultural applications.

The proposed period of this training course is 10 working days and will consist of:

1- Lectures

Approximately 25 hours of lectures covering the following topics will be offered to all participants:

- Basic Laser Physics
- Fundamentals of Laser Photochemistry and photobiology
- Laser based machining : methods and technology.
- Laser Applications in industry.
- Laser Applications in communications.
- Medical Applications of Laser.
- Laser Applications in Remote Sensing.
- Application of Laser in environment.
- Laser Application in Agriculture.

2- Laboratory work

20 hours laboratory sessions covering the above mentioned topics,

Lecturers

Lecturers Will Include

M.El Sayed , Gorgia Tech. U.S.A
H.El- Sayed, Old Dominion Univ. virginia ,U.S.A
Svanberg , Inst.Tech. Lund Sweeden
Milano , Italy
G. Jory, Padova, Italy
Yehia A. Badr (Niles), Egypt.
L. El Nadi , Faculty of Science , Egypt
Yosr, E. Gamal, (Niles), Egypt
M.H. Abdel kader, (Niles), Egypt
M.M. F. Sabry, (Niles), Egypt
A. El. Nadi, (Niles), Egypt
M.El-Batanouni, (Niles), Egypt
M. Saad, Faculty of Engineering, Egypt
S.H. El-Naby, (Niles), Egypt
S. Shafik, (Niles), Egypt.

Scientific Committee

Y.A.Badr (Coordinator)
L.M. El-Nadi
Y.E. Gamal
M.H. Abd-El Kader
A.M. El-Nadi
M.H. Al-Batanony
M.M. Sabry
M.S. Shafik

Mailing Information

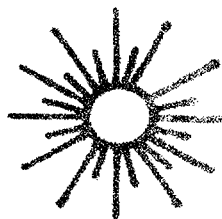
Any information should be send to the following addresses :

Prof. Yehia A. Badr
National Institute of Laser Enhanced Science,
Cairo University, Egypt.
Tel : 002025708480
Fax: 002025729499
E.mail: Ybadr@main-LSR.Cairo.eun.eg.
Prof. Gallieno Denardo
International Centre for Science and High
Technology (ICS-UNIDO)
AREA Science Park, Building L2, Padriciano 99,
34012 Trieste, Italy.
Tel: +39-040-9228125
Fax: +39-040-9228122
E.mail: Varnier@sci.area.Trieste.it.

NILES

International Training Course on Laser Science and its Applied Technology

		Time										
Day	Date	09:00	10:00	11:00	12:00	02:00	03:00	04:30	05:00	05:30	07:00	
Monday	09/11/98	Opening session	COFFEE BREAK	Y. Badr Introductory Lecture	LUNCH	LAB : Laser Systems LAB : Laser Eng. & Tech LAB : Environmental Appl		A.Elwy Laser Safety				
Tuesday	10/11/98	M.M.Sabry Fundamentals of Lasers I		T. Elsherbini Fundamentals of Lasers II		LAB : Laser Systems LAB : Laser Eng. & Tech LAB : Environmental Appl		J. Mittal Laser in Chemistry				
Wednesday	11/11/98	M.H.Abdel Kader Fundamentals of Laser PhotoChemistry & Photobiology		O.Lotfi Fundamentals of Laser Communications		LAB : Laser Systems LAB : Laser Eng. & Tech LAB : Environmental Appl		L. Elnadi Recent Advances in Laser Transmitters				
Thursday	12/11/98	S.I.Hassab Elnaby Fundamentals of Laser Remote Sensing		M.H. Elbatanouny Laser Tissue Interaction		LAB : Laser Systems LAB : Laser Eng. & Tech LAB : Environmental Appl		S.Ahmed Res. Ion. Spectr.I				
Friday	13/11/98	A.M. Elnadi Advances in High Power Lasers Appl.		L.Elnadi Types of Laser Systems		LAB : Laser Systems LAB : Laser Eng. & Tech LAB : Environmental Appl		S.Ahmed Res. Ion. Spectr.II				
Saturday	14/11/98	Registration	Opening session	PL1: M. Elsayed	PL2: A.A. Ahmed	PL3: H. Bellen	COFFEE BREAK	Session 1				
Sunday	15/11/98	IL1: H.V. Kienz IL2: J. Jenhouch	IL3: E. Elnadi IL4: G. Jor	IL5: D. Boudreau IL6: A. Bendat	IL7: A. Roca IL8: J. Parin	Session 2						
Monday	16/11/98	IL9: M. Hara IL10: H. H. C.	IL11: S. Sato IL12: H. Elsayed	IL13: M. H. Abdel Kader	IL14: G. Galimberti IL15: E. Elnadi	Session 3						
Tuesday	17/11/98	J. Baudou A. Elwy A. El Nozahy M.H. Elbatanouny	M. Elsayed H. Kuroki D. Boudreau A. Medhat	LUNCH	LAB : Laser Systems LAB : Laser Eng. & Tech LAB : Environmental Appl LAB : Medical Appl.	Group Discussion Finalize Group Discussion Group Discussion						
Wednesday	18/11/98	TRIP TO RAS SEDR										
Thursday	19/11/98	J. Baudou M.H. Elsayed K. Winkler A. Elwy	COFFEE BREAK	M. Elsayed M. Abdel Harith M.H. Elbatanouny	LUNCH	LAB : Laser Systems LAB : Laser Eng. & Tech LAB : Environmental Appl LAB : Medical Appl.	Group Discussion					
Friday	20/11/98	M. Farah Y. Qasbi H. Shahr		J. Baudou E. Elsherbini Y. Mostafa		LAB : Laser Eng. & Tech LAB : Environmental Appl LAB : Medical Appl.	Group Discussion					
Saturday	21/11/98	Panel Discussion		H. Tas								



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



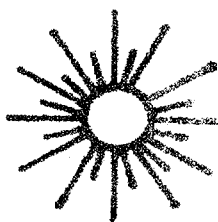
جامعة القاهرة

ICS & UNIDO
Trieste - Italy

**INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)**

PROGRAM

Monday 9 th Nov.	
9.00	Opening Ceremony Speech by <i>Prof. Dr. Farouk Ismail</i> President of Cairo University Speech by <i>Prof. Gallieno Denardo</i> International Center for Science and Technology Area Co-Ordinator
10.00-11.00	High Tea
11.00-12.15	Introductory Lecture <i>Prof. Yehi A. Badr</i> Dean of NILES
12.15 – 14.00	Lunch
14.00 – 16.30	Group Practical Sessions Participants will be divided into 4 groups for experimental work (14/ group)
16.30 – 17.30	Laser Safety <i>Prof. Dr. Abdel Rahman Olwi</i>



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

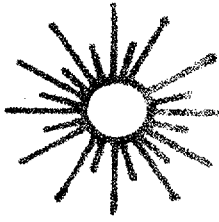
ICS & UNIDO

Trieste - Italy

INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)

PROGRAM

Tuesday 10th Nov.	
9.00 – 10.15	<u>General Lecture</u> Fundamentals of Laser (1) <i>Prof. Dr. M. M. Sabry</i>
10.15 – 10.45	Coffee Break
10.45 – 12.15	<u>General Lecture</u> Fundamental of Laser (2) <i>Prof. Dr. Tharwat El-Sherbini</i>
12.15 – 14.00	Lunch
14.00 – 16.30	Group Practical Sessions
16.30 – 17.30	<u>Advanced Topics</u> Lasers in Chemistry <i>Prof. Dr. J.Mittal</i>



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

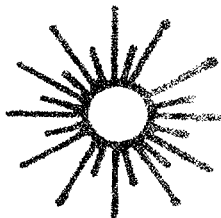
ICS & UNIDO
Trieste - Italy

INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)

PROGRAM OF SPECIALIZED COURSES

Group I
Laser Engineering and Technology

Thursday 19th Nov.	
9.00 – 10.15	Advanced Laser - Based Measuring Techniques in Flames <i>Dr. Mohy S. Mansour</i>
10.15 – 10.45	Coffee Break
10.45 – 12.00	Advances in Optical Fiber Communications <i>Prof. Dr. Osman L.El-Sayed</i>
12.00 – 14.00	Lunch
14.00 – 16.30	Practical Sessions



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



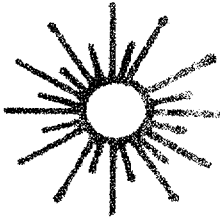
جامعة القاهرة

ICS & UNIDO
Trieste - Italy

INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)

PROGRAM

Wednesday 11 th Nov.	
9.00 – 10.15	General Lecture Fundamentals of Lasers Photochemistry and Photobiology (1) <i>Prof. Dr. Mohmoud H. Abdel Kader</i>
10.15 – 10.45	Coffee Break
10.45 – 12.00	General Lecture Fundamentals of Laser Communication <i>Prof. Dr. Osman Lotfi</i>
12.00 – 14.00	Lunch
14.00 – 16.30	Group Practical Sessions
16.30 – 17.30	Advanced Topics Recent advances in Laser Transmitters <i>Prof. Dr. Lotfia M. El. Nady</i>



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

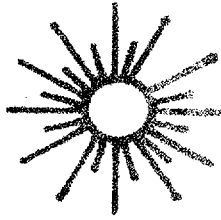
ICS & UNIDO
Trieste - Italy

INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)

PROGRAM OF SPECIALIZED COURSES

Group I
Laser Engineering and Technology

Friday 20 th Nov.	
9.00 – 10.15	Laser Engineering Application in Measurements and Sensing <i>Prof. Dr. Mahmoud Fathi</i>
10.15 – 10.45	Coffee Break
10.45 – 12.00	Laser System Design <i>Engs. Tarek Habashy, Ehab Salah and Waleed Mohamed</i>
12.00 – 14.00	Lunch
14.00 – 16.30	Practical Sessions



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES
N . I . L . E . S



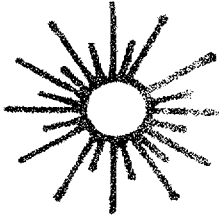
جامعة القاهرة

ICS & UNIDO
Trieste - Italy

INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)

PROGRAM

Thursady 12 th Nov.	
9.00 – 10.15	General Lecture Fundamentals of Lasers Remote Sensing (1) <i>Dr. Salah Hassab El-Nabi</i>
10.15 – 10.45	Coffee Break
10.45 – 12.00	General Lecture Laser Tissue Interaction <i>Prof. Dr. Mohammed H. El Batanony</i>
12.00 – 14.00	Lunch
14.00 – 16.30	Group Practical Sessions
16.30 – 17.30	Advanced Topics Resonance Ionization Spectroscopy (1) <i>Dr. Sayed A. Ahmed</i>



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



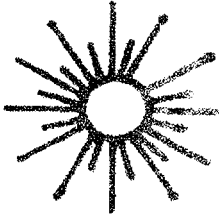
جامعة القاهرة

ICS & UNIDO
Trieste - Italy

INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)

PROGRAM

Friday 13 th Nov.	
9.00 – 10.15	General Lecture Advances in High Power Laser Applications <i>Prof. Dr. Adel M.El-Nadi</i>
10.15 – 10.45	Coffee Break
10.45 – 12.00	General Lecture Types of Lasers Systems <i>Prof. Dr. L. El-Nadi</i>
12.00 – 14.00	Lunch
14.00 – 16.30	Group Practical Session
16.30 – 17.30	Advanced Topics Resonance Ionization Spectroscopy (2) Dr. Sayed A. Ahmed



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

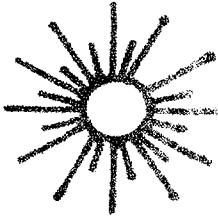
ICS & UNIDO
Trieste - Italy

**INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)**

PROGRAM OF SPECIALIZED COURSES

**Group I
Laser Engineering and Technology**

Tuesday 17th Nov.	
9.00 – 10.00	Laser Material Processing (1) <i>Prof. Dr. Adel El-Nadi</i>
10.15 – 10.45	Coffee Break
10.45 – 12.00	Introduction to Optical Fibers (2) <i>Dr. Hanna Krolous</i>
12.00 – 14.00	Lunch
14.00 – 16.30	Practical Sessions
16.30 – 17.30	Laser Atomic Absorption Spectroscopy Using Diode Laser <i>Prof. Dr. H.J.Kunze</i>



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

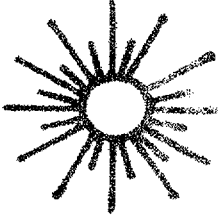
ICS & UNIDO
Trieste - Italy

INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)

PROGRAM OF SPECIALIZED COUSES

Group II
Environmental & Agricultural Applications

Friday 20 th Nov.	
9.00 – 10.15	The use of CO ₂ – TEA Laser based Lidar-Diol System for Pollution Monitoring in urban Madrid <i>Dr. Taied Gasmi</i>
10.15 – 10.45	Coffee Break
10.45 – 12.00	Laser Induced Fluorescence <i>Dr. Sayed El-Shirbiny</i>
12.00 – 14.00	Lunch
14.00 – 16.30	Practical Sessions
16.30 – 17.30	Group Discussion



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES
N . I . L . E . S



جامعة القاهرة

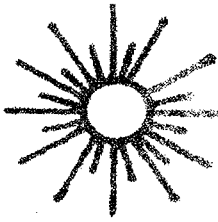
ICS & UNIDO
Trieste - Italy

INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)

PROGRAM OF SPECIALIZED COURSES

Group II
Environmental & Agricultural Applications

Tuesday 17 th Nov.	
9.00 – 10.15	Coherent and incoherent Lidar Detection <i>Dr. A.El-Nozahy</i>
10.15 – 10.45	Coffee Break
10.45 – 12.00	Applications of Lasers to Elemental Trace Analysis <i>Prof. Dr. Denis Boudrean</i>
12.00 – 14.00	Lunch
14.00 – 16.30	Practical Sessions
16.30 – 17.30	Group Discussions



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

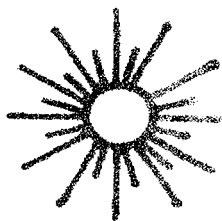
ICS & UNIDO
Trieste - Italy

INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)

PROGRAM OF SPECIALIZED COURSES

Group II
Environmental & Agricultural Applications

Thursday 19 th Nov.	
9.00 – 10.15	UV Photodamage and DNA repair <i>Dr. Klaus D. Winikler</i> <i>Dr. Mona A. Abdel Kereim</i>
10.15 – 10.45	Coffee Break
10.45 – 12.00	Current Laser Based Analytical Methods In Environmental Application <i>Prof. Mohamed A. Harith</i>
12.00 – 14.00	Lunch
14.00 – 16.30	Practical Sessions
16.30 – 17.30	Group Discussions



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

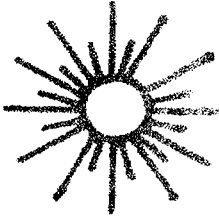
ICS & UNIDO
Trieste - Italy

INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)

PROGRAM OF SPECIALIZED COURSES

Group III
Laser System

Tuesday 17 th Nov.	
9.00 – 10.15	Molecules in Strong Electromagnetic Fields <i>Prof. Dr. Andree Bandruk</i>
10.15 – 10.45	Coffee Break
10.45 – 12.00	Femto-Second Pump-Probe Technique in Femto-Second Laser Spectroscopy <i>Prof. Dr. Hani El Sayed</i>
12.00 – 14.00	Lunch
14.00 – 16.30	Practical Sessions
16.30 – 17.30	Group Discussions



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N. I. L. E. S



جامعة القاهرة

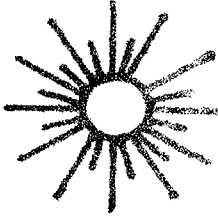
ICS & UNIDO
Trieste - Italy

INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)

PROGRAM OF SPECIALIZED COURSES

**Group III
Laser System**

Thursday 19th Nov.	
9.00 – 10.15	Laser Communication Experiments using Satellites (I) Overview International Experimental systems in U.S.A, Europe & Japan Configuration of Optical Links Between Ground and Sattelites” <i>Prof. Dr. Lotfia El-Nadi</i>
10.15 – 10.45	Coffee Break
10.45 – 12.00	Laser Communication Experiments using Satellites (II) Overview International Experimental systems in U.S.A, Europe & Japan Configuration of Optical Links Between Ground and Sattelites” <i>Prof. Dr. Lotfia El-Nadi</i>
12.00 – 14.00	Lunch
14.00 – 16.30	Practical Sessions
16.30 – 17.30	Group Discussions



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

ICS & UNIDO

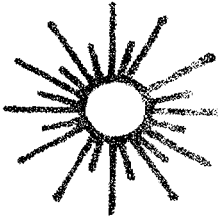
Trieste - Italy

INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)

PROGRAM OF SPECIALIZED COURSES

Group III
Laser System

Friday 20 th Nov.	
9.00 – 10.15	Laser Induced Plasma <i>Prof. Dr. F.F. Elakshar</i>
10.15 – 10.45	Coffee Break
10.45 – 12.00	Gaussian Beam Propagation <i>Dr. M. Salah Shafik</i>
12.00 – 14.00	Lunch
14.00 – 16.30	Practical Sessions
16.30 – 17.30	Group Discussion



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

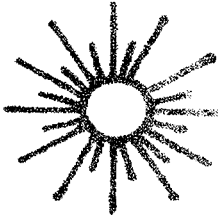
ICS & UNIDO
Trieste - Italy

INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)

PROGRAM OF SPECIALIZED COURSES

Group IV
Biological and Medical Applications

Tuesday 17 th Nov.	
9.00 – 10.15	Photodynamic Therapy of Tumours <i>Prof. Dr. M.H. El-Batanouny</i>
10.15 – 10.45	Coffee Break
10.45 – 12.00	Laser in Ophthalmology <i>Dr. Ibrahim Taher</i> <i>Dr. Ahmed Medhatt</i>
12.00 – 14.00	Lunch
14.00 – 16.30	Practical Sessions
16.30 – 17.30	Group Discussions



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

ICS & UNIDO

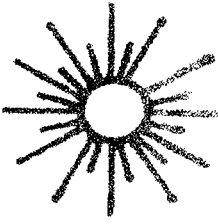
Trieste - Italy

INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)

PROGRAM OF SPECIALIZED COURSES

Group IV
Biological and Medical Applications

Thursday 19 th Nov.	
9.00 – 10.15	Laser in Gynecology <i>Dr. Sami Ismail</i> <i>Dr. Amr El-Nory</i>
10.15 – 10.45	Coffee Break
10.45 – 12.00	Laser in Urology and in Biostimulation of Healing <i>Prof. Dr. M.H. El Batanouny</i> <i>Dr. El Swafy</i>
12.00 – 14.00	Lunch
14.00 – 16.30	Practical Sessions
16.30 – 17.30	Group Discussions



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

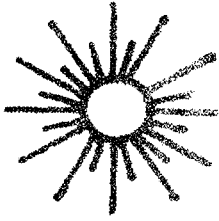
ICS & UNIDO
Trieste - Italy

INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)

PROGRAM OF SPECIALIZED COURSES

Group IV
Biological and Medical Applications

Friday 20 th Nov.	
9.00 – 10.15	Laser in Dermatology <i>Dr. Hisham Shokir</i> <i>Dr. mona Soliman</i>
10.15 – 10.45	Coffee Break
10.45 – 12.00	Laser in E.N.T <i>Dr. Yosri Mostafa</i> <i>Dr. Ahmed El Kharbotly</i>
12.00 – 14.00	Lunch
14.00 – 16.30	Practical Sessions
16.30 – 17.30	Group Discussions



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

ICS & UNIDO
Trieste - Italy

INTERNATIONAL
TRAINING COURSE ON LASER SCIENCE AND ITS
APPLIED TECHNOLOGY
(9-21 Nov. 1998)

PROGRAM OF SPECIALIZED COURSES

All Groups

Wednesday 18th Nov. 1998

One day Working Excursion to Ras Sidr
Talk by
Prof. Dr. M. El Sayed

**The International Training Course
(9-21 Nov. 1998)**

No.	Name	Nationality	Date
1	Prof. Dr. Mostafa El-Sayed	USA	13-19
2	Prof. Dr. Hani El-Sayed Ali	USA	11-20
3	Prof. Dr. L. M. El-Nadi	Qatar	13-17
4	Prof. Dr. H.J. Kunze	Germany	13-19
5	Prof. Dr. G. Jori	Italy	13-19
6	Prof. Dr. Denis Boudreau	Canada	13-19
7	Prof. Andre D. Bandrauk	Canada	13-21
8	Prof. Giuseppe Palumbo	Italy	13-17
9	Prof. Dr. Y. Greiss	Australia	13-17
10	Prof. H.P. Berlien	Germany	8-17
11	Prof. Dr. T. Patrice	France	8-17
12	Prof. Jai P. Mittal	India	12-17
13	Dr. Sayed A. Ahmed	India	13-18
14	Prof. Angelika Rueck	Germany	13-19
15	Prof. Gallieno Denardo	Italy	13-19
16	Prof. S. Formisano	Italy	13-17
17	Prof. R. Esposito	Italy	13-17
18	Prof. T. Sarna	Poland	13-18
19	Prof. J. Ulenbusch	Germany	13-18
20	Prof. E. Hintz	Germany	13-17
21	Dr. Taieb Gasmi	Algerian	9-21
22	Prof. Ezz El-Din Al-Raei	Egyptian	9-21
23	Prof. Tharwat El-Sherbini	Egyptian	9-21
24	Prof. M. Abd El-Harith	Egyptian	9-21
25	Prof. Farouk El-Akshar	Egyptian	9-21
26	Prof. Yehia A. Badr	Egyptian	9-21
27	Prof. Yosr Ezz-Eldin Gamal	Egyptian	9-21
28	Prof. M. H. Abdel Kader	Egyptian	9-21
29	Prof. M.H. E I- Batanooni	Egyptian	9-21
30	Prof. A. El-Nadi	Egyptian	9-21
31	Prof. M. M. Sabry	Egyptian	9-21
32	Dr. Salah Hasab El-Nabi	Egyptian	9-21
33	Prof. Emam H. Al-Nagmy	Egyptian	9-21
34	Prof. Winckler	Germany	9-21
35	Prof. Lucia	Germany	9-21
36	Prof. S. Shafik	Egyptian	9-21
37	Dr. O.L. El-Sayed	Egyptian	9-21
38	Dr. M.S. Mansour	Egyptian	9-21
39	Dr. M. Fathi	Egyptian	9-21
40	Dr. M.A.Kereim	Egyptian	9-21

In addition to 10 people "in the medical group"

List of Participants from Arab & African Countries
in The International Training Course On
Laser Science & Its Applied Technology
(9-21 Nov. 1998)

No.	Name	Country	Institution	Specializ./ Field of Research
1	- Dr. Kedro Sidiki Diomande	Abidjan	Lab. Of Crystallography and Spectroscopy	Laser Physics
2	- Kamel Bourai	Algeria	CDTA Lab. Of Lasers	Mechanics of Precision & Optics
3	- Taieb Gasmi	Algeria	Madrid Univ.	Laser Physics
4	- Mohamed Larbi Hioul	Algeria	CDTA Lab. Of Lasers	Laser Technology
5	- Nourredine Moussaoui	Algeria	Inst. Of Physics	Physics
6	- Dr. Anmar Mudhaffar Al-Tak	Iraq	Mosul Univ.	Medicine & Surgery Ophthal.
7	- Dr. Mohammed A. Abbas	Iraq	Mustansirya Univ.	IR Laser
8	- Dr. Essam George Youssef	Iraq	Bagdad Univ.	Mech. Eng. Of Laser
9	- Dr. Yusef Ghazi El-Jaafreh	Jordan	Mo'tah Univ.	Communications
10	- Shadia J.A. Khmayies	Jordan	Al-Isra Univ.	Physics
11	- Dr. Basem Abu El-Gadaiel	Jordan	Jordan Univ.	Fluid Mechanics
12	- Dr. Yasser El-Hag	Jordan	Yarmook Univ.	Chemistry
13	- Dr. Mohammad A. Roomyia	Palestine	Islamic Univ. – Gaza	Nuclear Physics
14	- Dr. Subhi K. Saleh	Palestine	Al-Nagah National Univ.	Laser Spectroscopy
15	- Dr. Hazem Falah Sakeek	Palestine	Al-Azhar Univ. – Gaza	Physics
16	- Emad Ahmad Al-Nounou	Palestine	Al-Azhar Univ. – Gaza .	Electronics & Communication
17	- Ali A. Hamid Khalili	Qatar	Qatar Univ.	Physics
18	- Prof. Abd El-Aziz A. Al-Soyan	Saudi Arabia	KFUPM	Chemistry
19	- Prof. Fida F. Al- Adel	Saudi Arabia	KFUPM	Physics
20	- Amgad M. Mazhar	Saudi Arabia	King Saoud Univ.	Physics
21	- Ayman M. Aboul-Magd	Saudi Arabia	King Saoud Univ.	Physics
22	- Prof. Ahmadou Wagou	Sengal	Sheikh Antah Daioub / Dakar	Laser Systems
23	- Koucher El-Hag Mohamed	Sudan	Sudan Univ. of Science & Tech.	Medical Physics
24	- Dr. Basher Hassan El-Zaltek	Syria	Damascus Univ.	Animal Reproduction
25	- Dr. Abdul- Karim Khalil Al-Salem	Syria	Al-Bath Univ.	Commun. & Optic Fiber
26	- Prof. Zohra Ben Lakhdar	Tunisia	Campos Univ.	Atomic & Molec. Phys.
27	- Dr. Ali Ahmed Al-Yazidi	Yemen	Hadhramot Univ.	Electronics & Communications
28	- Dr. Mostafa Yassin Saed	Yemen	Aden Univ.	Horticulture
29	Prof. VU BISH	Vitnam	Institute of Materials Science CNST	
30	Ahmed Abd-ElMohsen Al-Tawahia	Jordan	Applied Science Univ. (Accommodation only)	

**List of the Egyptian participants in
The International Training Course On Laser Science
& Its Applied Technology
(9-21 Nov. 1998)**

No.	Institution	Name	Specialization
1	<u>Cairo University:</u> Faculty of Science	- Ashraf El-Sherbini	Physics
2		- Hesham Abdel-Ghani	Physics
3		- Sayed Riyadh	Chemistry
4		- Mohamed Saada	Chemistry
5	<u>Faculty of Engineering:</u>	- Dr. Hanna Abdel-Malek Kirles	Communication
6		- Dr. Hebat Allah Moustafa Mourad	Communication
7	<u>Faculty of Agriculture.</u>	- Mohamed Abdel-Maboud Abdel Shafi	Crops
8		- Yousry Bayoumi Abdel-Haiy	Agri. Eng.
9	<u>Faculty of Physiotherapy</u>	- Dr. Zainab Mohamed Helmi)	Medicine
10	<u>N.I.L.E.S:</u>	- Ahmed Mahmoud Abdel-Monem	Physics
11		- Moustafa Hashem	Engineering
12		- Mohamed Soliman Khater	Agriculture
13		- Mahmoud Laila	Medicine
14	<u>Alex. Univ.</u> Faculty of Engineering	- Dr. Hashem Fahmy El-Labban	Production Eng.
15	<u>Tanta University</u> Faculty of Science:	- Dr. Gamal Housein Abou-Koura	(Theor. Physics/ Laser Plasma Physics)
16	<u>Al-Azhar Univ.</u> Faculty of Science	- Mansour Abdel-Mageed Mansour	Physics Plasma
17	Central Metallurgical and Development Inst.	- Dr. Abdel-Monem Mohamed Al-Batahgy	Mech. Eng.
18	National Heart Inst.	- Dr. Hassan Shawki	Cardiology
19	Armed Forces	Eng. Al-Sayed Alarabi	Engineering
20	National Research Center	- Riham Mohamed Sabry Abdel-Raouf	Medicinal & Atomic Plants
21	Optics Arab Co.	- Alaa El-dine Abdel-Samei mohamed	Optics

Additional
List of the Egyptian participants in
The International Training Course On Laser Science
& Its Applied Technology
(9-21 Nov. 1998)

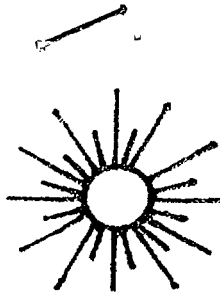
No.	Institution	Name	Specialization
1	Central Metallurgical and Development Inst.	-Dr. Mohamed Hanafy El-Sayed (Mech. Eng.)	Mech. Eng.
2		- Eng. Naser Adly Moustafa	Mech. Eng.
3	National Heart Inst.	- Dr. Moustafa Hussein	Physiotherapy
4		- Dr. Abdel Ghani Mohamed	Cardiology
5		- Dr. Adnan Abdel-Razek El-Gamal	Cardiology
6	Inst. Of Audiology & Speech	- Dr. Hanafy Mahmoud Abdel-Salam	E.N.T.

THE THIRD INTERNATIONAL CONFERENCE ON LASER SCIENCE & APPLICATIONS

14-16 NOV. 1998

CHAIR PERSONS

	9.00	9.30	10.30	11.30 - 1.00		1.00 - 2.00	2.00 - 3.00.	3.00 - 5.00r	5.00 - 5.30	5.30 Oral Presentations
Sta. 14.Nov	Registn	Opening Ceremony	H I T E A	Prof.M.El Sayed Chairman : - Prof. Y.Badr - Prof. J.Mittal		L U N C H	Prof. Sayed A.Ahmed Chairman: - Prof. H. El Sayed - Prof. Yosr E. Gamal	Prof. H.B. Berlein Chairman: -Prof.M.ElBatanouny - Prof. AboShokka	B R E A K	Prof. A.Rueck Prof.M.A. Harith
	9.00 - 10.30	10.30 - 11	11 - 12	11	12-1	1.00 - 2.00	2.00-3.30	3.30-5.00	5.00 - 5.30	
Sun. 15.Nov	Prof. Kunze Prof. Ulenbousch Chairman: -Prof. Adel El-Nadi -Prof. E. Hintz	B R E A K	Prof.L.El Nadi Chairman:- -Prof.M. El-Sayed -Prof.M.H.Abdel Kader	Prof.G.Palumo Chairman: Prof. Nael Barakat Dr.S.Shafek	L U N C H	Prof. A.Bandrauk Prof. D.Boudrau Chairman: Prof.M.Montaser Prof.T.Sarna	Prof. M.H.Abd El Kader Prof.A.Rueck Chairman: Prof.E.k.Abdel Salam Prof. H. Berlien	B R E A K	Prof. F.Al Akshar Prof. Sh. Khattab	
Mon 16.Nov	Prof. E.Hintz Prof.J.Mittal Chairman -Prof. L.El Nadi -Prof. H.J.Kunze	B R E A K	Prof. T. Sarna Chairman -Prof. T.El-Sherbini -Prof. G. Palumbo	Prof. H. El-Sayed Chairman:- -Prof. J. Ulenbush -Prof. M.El-Nadi	L U N C H	Prof. K. Winkler Chairman: -Prof. A.Bandrauk -Prof. Ezz E. El Raei	Prof. E. H. Al-Nagmy Chairman: -Prof. Sayed Seif -Prof. T. Greisse	B R E A K	Closing Session Pannel Discussion Chairman:- Prof. Y.Badr Prof.S.El Nabj	



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



Department of Laser Systems

Demonstration Experiments

International Centre for Science and
High Technology, ICS-UNIDO
(Trieste, Italy) and The National
Institute of Laser Enhanced
Sciences, Cairo University

A Training Course on
Laser Science and its Applied
Technology

Cairo University
9-21 Nov. 1998

Supervised by:

Dr. Salah Shafik

Abdel-satar Mohamed

Atef Saber

Gamal Ezat

Wafaa Mostafa

Experiment No.1

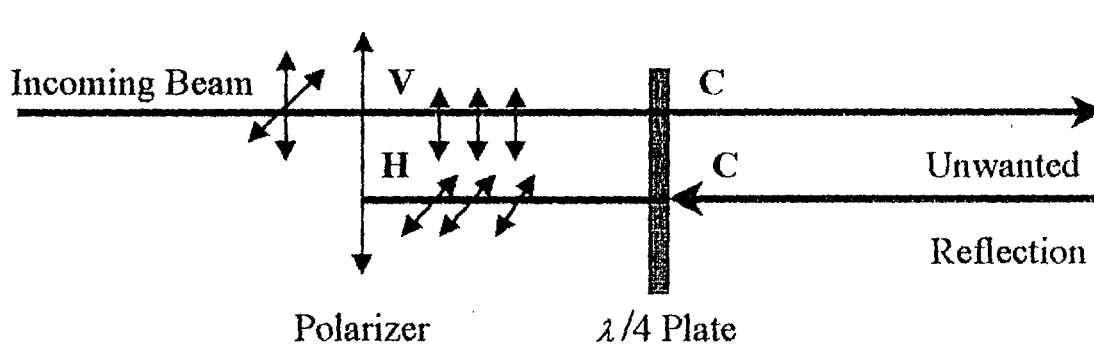
Polarization

Objective: To demonstrate the function of each of the following components in a laser systems.

- (1) Brewster window
- (2) Quarter wave plate
- (3) Half wave plate

Also to explain how an optical Isolator and a Q-switch work.

The Optical Isolator:



- V : Vertical polarization
H : Horizontal polarization
C : Circular polarization

The incoming beam becomes vertically polarized after passing through the polarizer. The beam emerging from the $\lambda/4$ plate is circularly polarized. The reflected (unwanted) beam is also circularly polarized but in the opposite sense. Thus it becomes linearly polarized in the horizontal direction after passing again through the $\lambda/4$ plate. The beam is then blocked by the polarizer, i.e. is prevented from reaching the source.

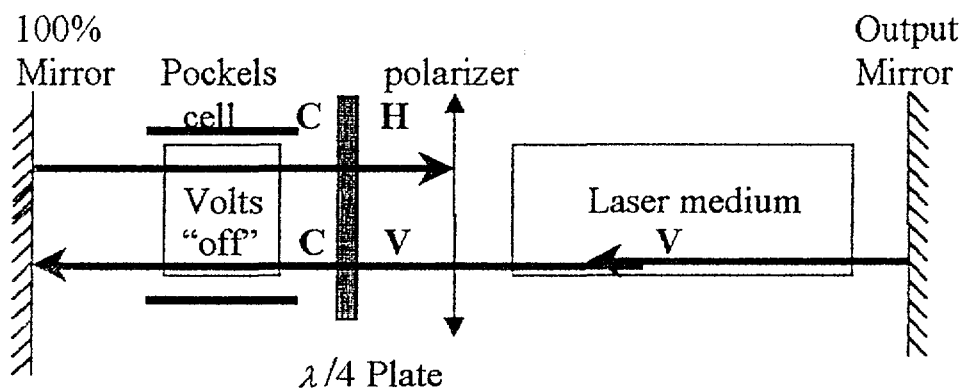
The Q-Switch:

As noted above, a plane polarized beam passing twice (in two opposite directions) through a $\lambda/4$ plate will rotate its plane of polarization by 90 degrees. Thus **One can assume** that a single pass through the $\lambda/4$ plate causes a 45 degrees rotation!.

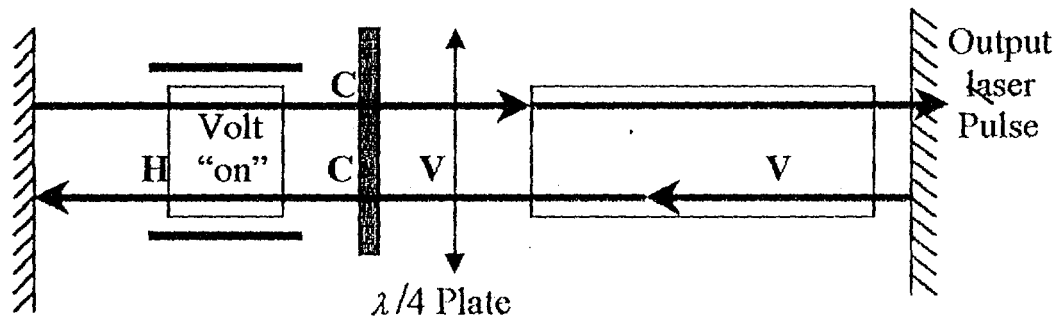
The heart of a Q-switch here is a "Pockel cell", which when connected to a pre-set potential difference, will act as a $\lambda/4$ plate.

In the following figures, the beam propagating within the cavity of the laser oscillator makes a double pass through the Pockels cell and the $\lambda/4$ plate. when the pockels cell is "ON", it adds a 45 degrees rotation, and the $\lambda/4$ plate adds another 45 degrees with each pass, giving a total of 180 degrees. Thus the vertical polarization that is transmitted through the polarizer is rotated to horizontal, and back to vertical, so that it is transmitted by the polarizer allowing the oscillation to occur.

Fast electric pulses of suitable voltage and duration is thus able to switch the pockels cell, and thus Q-switching is realized.



Cavity closed , no lasing.



Cavity open and Lasing

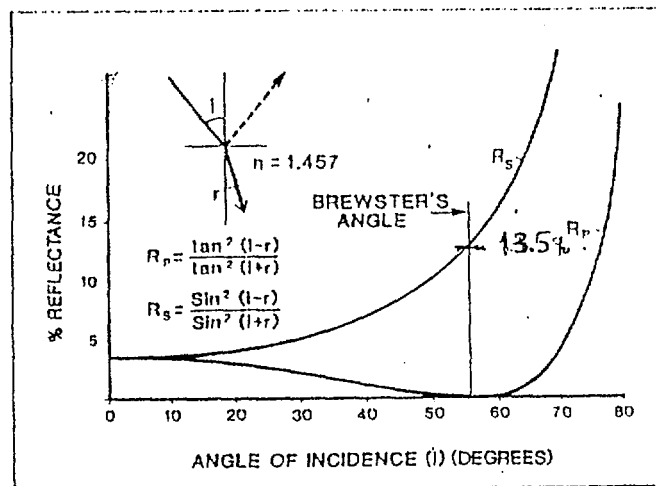
- V = Vertical Polarization
- H = Horizontal Polarization
- C = Circular Polarization

Polarization by reflection

-For an unpolarized beam incident onto a transparent surface, the reflected and transmitted beams become polarized to some degree.

- An unpolarized beam is equivalent to equal S and P linearly polarized components .

- Reflectance differs for S and P components.



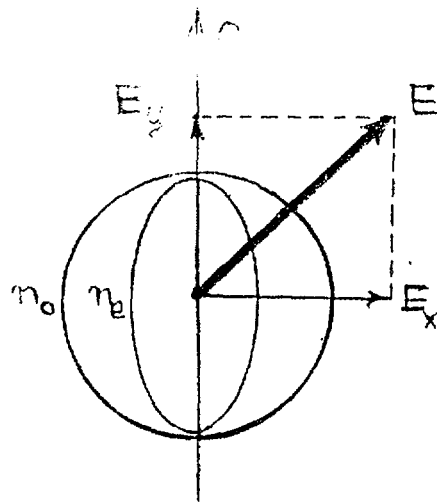
Reflectance for s and p polarized light.

-“P” polarized light incident at Brewster s angle (55.5°) for ($n = 1.457$) is completely transmitted. None is reflected.

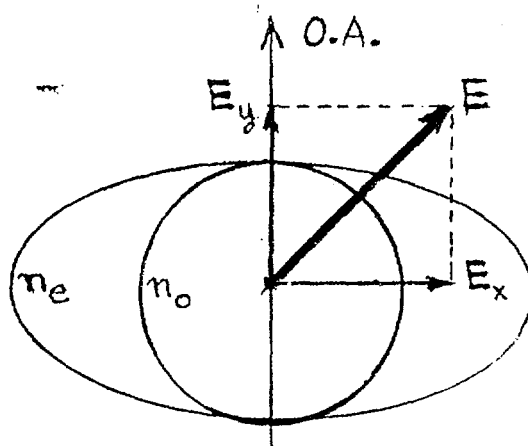
-“S” polarized light incident at Brewster angle

Only 86.5% is transmitted,

13.5% is reflected,



Positive birefringence ($n_e < n_o$)



negative birefringence ($n_e > n_o$)

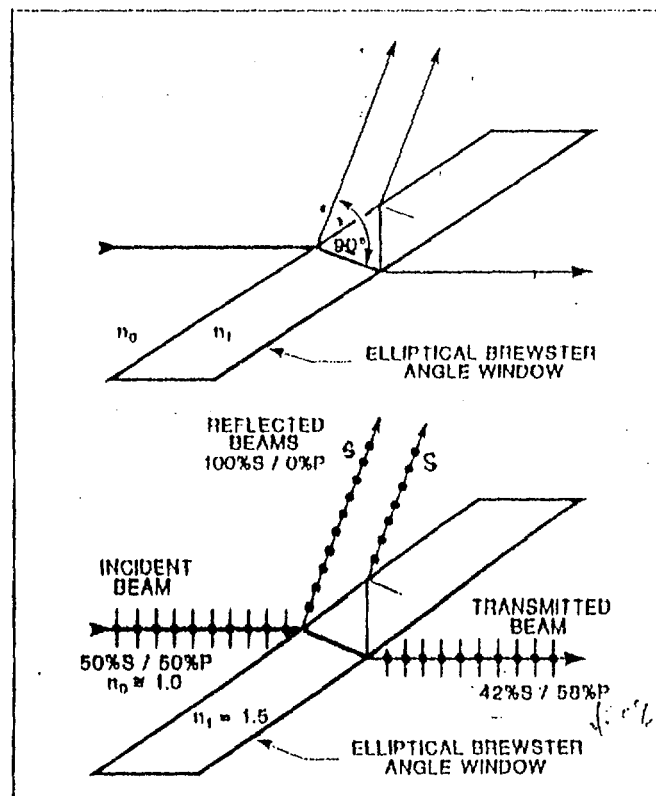
propagation perpendicular to the plane
of the page (also to O. A.)

- At Brewster's angle, the reflected and refracted rays are perpendicular.

- Thus according to Snell's law, the Brewster's angle is given by :

$$i_B = \tan^{-1} \left(\frac{n_1}{n_0} \right)$$

Where $n_0 = \text{R. I. of air } (\sim 1)$
 $n_1 = \text{R. I. of optical material}$



Retarders:

The most common type of retarder is a slice of birefringent material in which the o-ray and e-ray travel at different velocities. Two rays which start in phase get out of phase with each other. For light of wavelength the phase difference, ϕ , is given by :

$$\phi = \pm \frac{2\pi d (n_e - n_o)}{\lambda}$$

and the path difference by :

$$k \lambda = \pm d (n_e - n_o)$$

where: $\left(\frac{m}{4}\right)$ see below.

d = Thickness of the plate

n_e = Refractive index for the extraordinary ray

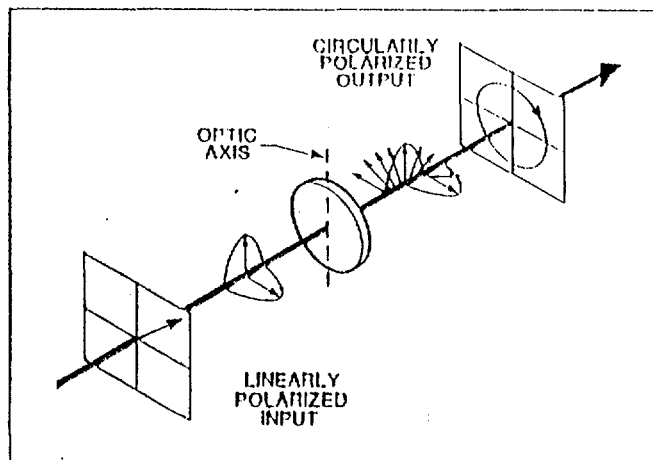
n_o = Refractive index for the ordinary ray

When $k = m/4$ where m is any odd integer, the path difference is effectively a quarter wave, so the plate is called a quarter wave plate. When the path difference is a half wave, the retarder is called a half wave plate.

Operation of $\lambda/4$ plate

A $\lambda/4$ plate is used to convert linearly polarized light into circular or elliptically polarized light

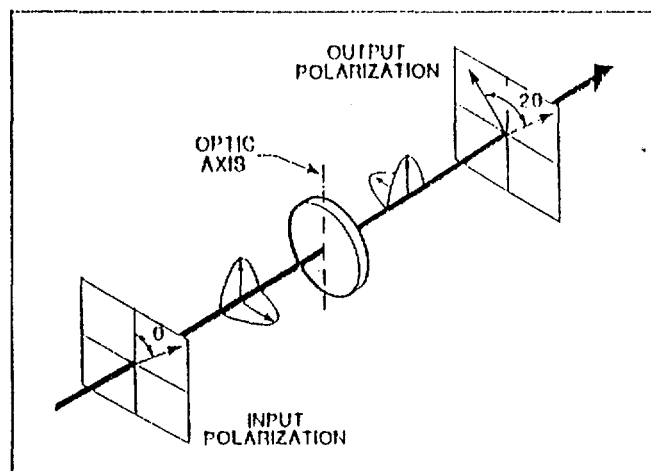
For circularly polarized output, the input E vector must be at 45° to the O.A.



Operation of $\lambda/2$ plate :

the \vec{E} vector of the input beam is at θ to the optic axis

The input beam is effectively resolved into two orthogonally polarized component beam, with the \vec{E} vector parallel and the other with the \vec{E} vector perpendicular to the optic axis .



Rotation of polarization by a Half Wave Retarder.

The retarder delays one of these beams with respect to the other.

The phase of one vector component is delayed by (180°) with respect to the other, a path difference of one half wavelength.

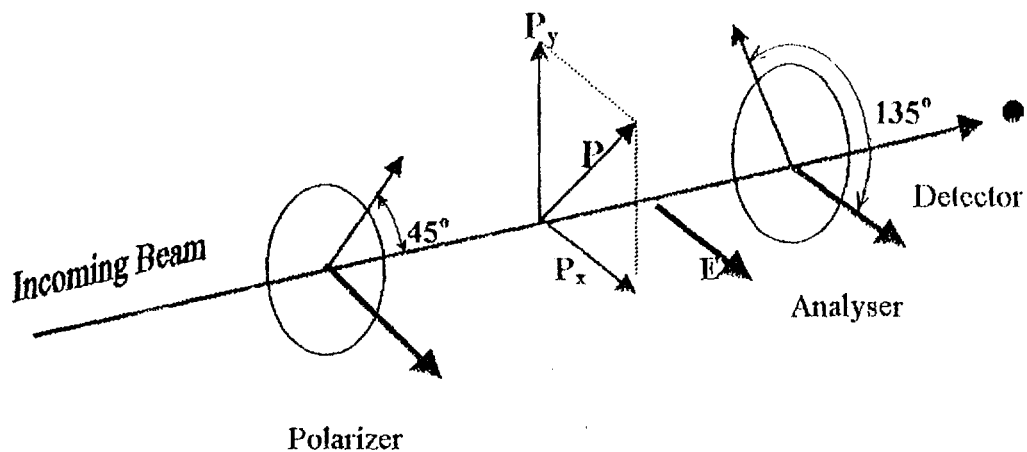
The sum of the two emergent beams is a beam with linear polarization but rotated by 2θ from the original input beam .

Experiment No. (2)

The Kerr Effect.

Objective: To demonstrate Kerr effect (Rotation of The plane of Polarization due to induced birefringence)

The Experimental Setup:



The incoming beam is polarized after passing through the polarizer. The plane of polarization makes an angle 45° with the direction of the applied field E (and hence also to the optic axis). The incident polarization is resolved into two components P_x and P_y . Due to the different refractive indices n_x and n_y in the medium, the two polarizations will pass through at different speeds, resulting in two different pass lengths $n_x L$ and $n_y L$. The path difference is $D = L(n_x - n_y)$.

The beam emerging from the medium will have its plane of polarization rotated by an angle that depends on D .

Note: In the figure above, the analyser is set at 90° to polarizer, such that no light passes through when $E=0$.

THE KERR EFFECT

Induced birefringence introduces a phase difference

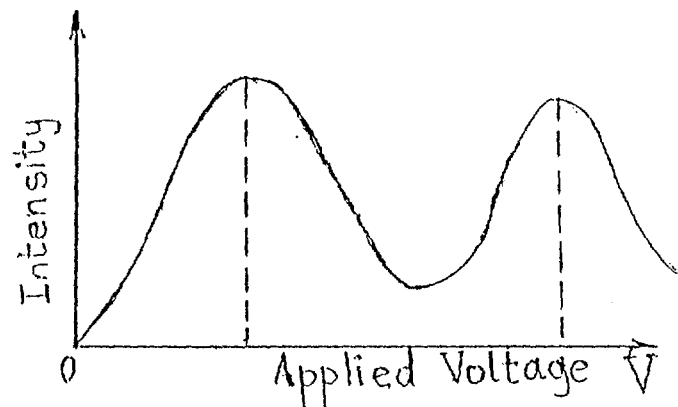
$$\begin{aligned} \text{(Phase difference)} &= \frac{2\pi}{\lambda} \times \text{(path difference)} \\ \phi &= \frac{2\pi}{\lambda} D \end{aligned}$$

$$D = \ell (n_x - n_y) = B \lambda \ell E^2$$

The path difference D depends on the square of the applied field.

ℓ is the length of the material,

B is Kerr const.



*1st max. corresponds to 90° rotation, i.e. $D_1 = \frac{\lambda}{2}$

*2nd max. corresponds to 270° rotation, i.e. $D_2 = \frac{3}{2} \lambda$

*The starting point $I = 0$ when $V = 0$ corresponds to crossed polarizer and analyser.

$$\frac{D_2}{D_1} = \frac{B \lambda \ell E_2^2}{B \lambda \ell E_1^2}$$

$$* \frac{(3/2)\lambda}{(1/2)\lambda} = \frac{E_2^2}{E_1^2}$$

$$* \frac{E_2^2}{E_1^2} = 3 \quad (\text{Check this form results})$$

Generally :

<u>a phase diff.</u> <u>of</u>	<u>Introduces a</u> <u>path diff of</u>	<u>Resulting in an</u> <u>angle of rotation</u>
$\pi / 2$	$\lambda / 4$	(circularly polarized)
π	$\lambda / 2$	90°
$3\pi / 2$	$3\lambda / 4$	(circularly polarized)
2π	λ	180°
$5\pi / 2$	$5\lambda / 4$	(circularly. Polarized)
3π	$3\lambda / 2$	270°
$n \frac{\pi}{2}$	$n \frac{\lambda}{4}$	circular polarization, <u>n odd</u>
$n \frac{\pi}{2}$	$n \frac{\lambda}{4}$	rotation angle $n \times 45^\circ$, <u>n even.</u>

Experiment No.3

The Faraday Effect

Objective: (1) To verify the proportionality between the angle of rotation and the magnetic field. (2) To demonstrate the decrease in Verdit's constant with increasing the wavelength.

Theory:

In faraday effect, if a transparent isotropic crystal is placed in a magnetic field and linearly polarized light is transmitted in the field direction, then the plane of polarization is rotated through an angle given by

$$\Delta \Phi = BLV \quad (1)$$

The angle of rotation increases with increasing both the magnetic field and the length of the transparent medium. V is called Verdit's constant and it is a measure of the rotation per applied magnetic field per length of the medium. Also the angle of rotation will increase with increasing the frequency of the incident light. The key to explain Faraday effect is the magnetic field. When a magnetic field is applied to the crystal, electrons will execute additional frequency given by

$$\omega_L = (e/m)B \quad (2)$$

which is known as Larmor frequency. Also the magnetic field will cause the plane polarized light with frequency ω to decompose inside the crystal into two circular polarizations, namely, right circular polarization and left circular polarization. The frequency of right circular polarization relative to the precessing charge is $(\omega + \omega_L)$ and that of left circular polarization is

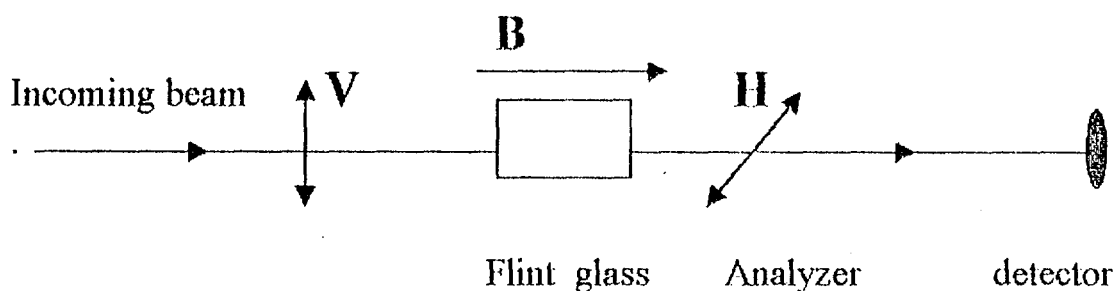
$(\omega - \omega_L)$. Consequently, the velocity of right circular polarization differs from that of left circular polarization inside the crystal, giving rise to birefringence. The angle of rotation is related to the difference in refractive indices by

$$\Delta \Phi = \omega (n_1 - n_2)L/2c \quad (3)$$

Accordingly, the plane of polarization of the incident light will rotate with an angle in proportion to the induced birefringence, $(n_1 - n_2)$.

Experimental setup:

As indicated below, a plane polarized laser is transmitted through the magnetic field and traverses through flint glass, so it will split into two circular polarizations each with different velocity, consequently each polarization will have its own refractive index, and from Eq. (3), the plane polarized light will rotate through certain angle. When there is no magnetic field applied to the crystal and the pass axis of the analyzer is perpendicular to the plane polarized light so the intensity on the detector is zero. After we apply the magnetic field, the plane polarized light will rotate, so there will be an intensity on the screen. The angle of rotation is then obtained by rotating the analyzer, so that the intensity on the screen is zero again.

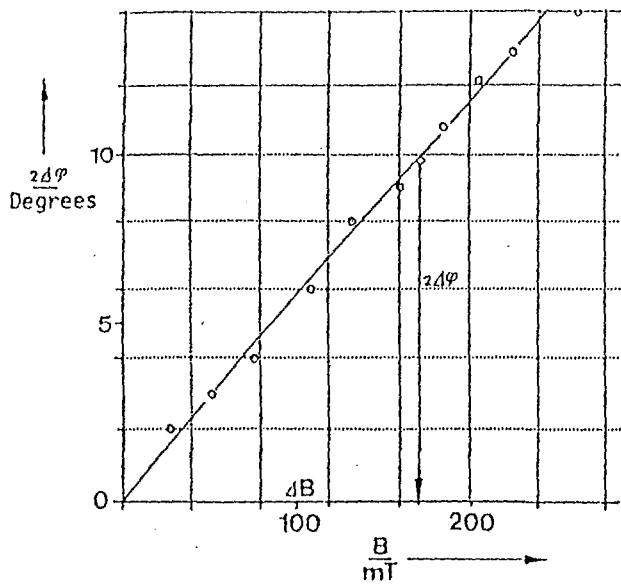


B: Magnetic field vector
V: Vertical polarization
H: Horizontal polarization

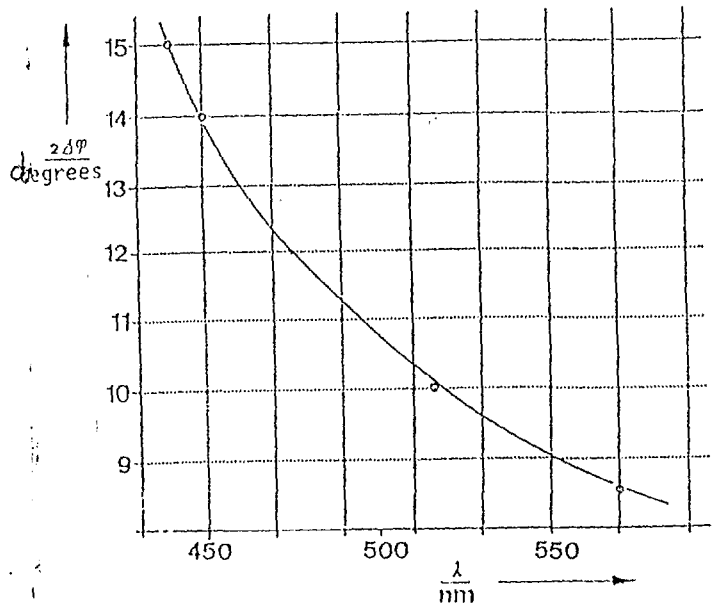
Note: No light passes through to the detector when $B = 0$.

Results:

- (1) Linear relation between the angle of rotation and the magnetic field.
- (2) Inverse relation between the angle of rotation and the wavelength.



Relationship between rotation $2\Delta\phi$ of the polarization plane and the magnetic field B .



Rotation of the polarization plane with a constant field as a function of wavelength.

Experiment No. (4)

Zeeman Effect:

Objective: To determine (e/m) by measuring the splitting of spectral lines in a magnetic field.

Theory:

It can be shown that due to the space quantization of orbital angular momentum in atoms, the energy separation between two adjacent magnetic sub-levels is :

$$dE = \frac{e}{2m} B \frac{h}{2\pi} \quad (1)$$

Where B is the magnetic field intensity .

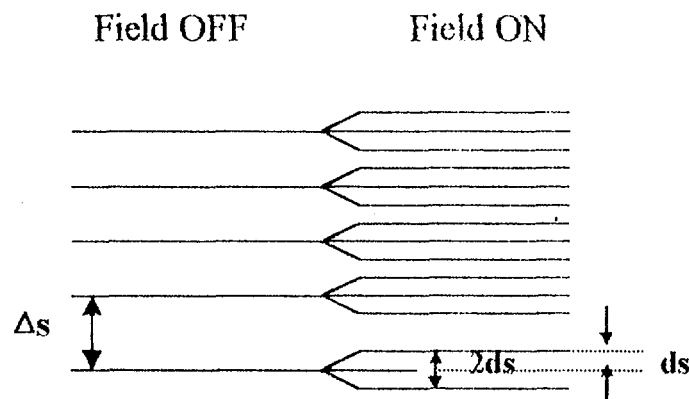
Applying a strong magnetic field to the atoms in a light source will cause the spectral lines to split into different close components, each having a slightly different wavelength. These components can be resolved using a high resolution interferometer, (a Lummer-Gehrke Plate in this case) .

The wavelength separation $d\lambda$ can be measured in terms of :

n : the refractive index of the Lummer-Gehrke plate.

Δs : the distance between two successive fringes in the absence of the magnetic field (see figure).

ds : the amount of splitting of a fringe caused by applying the magnetic field (see figure).



Measuring the Zeeman splitting

$$d\lambda = \frac{ds}{\Delta s} \cdot \frac{\lambda^2 \sqrt{n^2 - 1}}{2d(n^2 - 1)} \quad (2)$$

Generally $E = h\nu$

$$dE = h \cdot d\nu = \frac{hc}{\lambda^2} d\lambda \quad (3)$$

Replacing dE in (1) by equation(3)

$$\therefore d\lambda = \frac{e}{2m} \cdot \frac{B}{2\pi c} \cdot \lambda^2 \quad (4)$$

Replacing $d\lambda$ in (4) by equation (2)

$$\boxed{\therefore \frac{e}{m} = \frac{4\pi c}{B} \cdot \frac{ds}{\Delta s} \cdot \frac{\sqrt{n^2 - 1}}{2d(n^2 - 1)}} \quad (5)$$

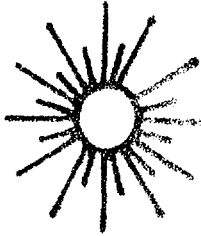
Measuring Example

$$B = 0.77T$$

$$\Delta s = 0.15mm, ds = 0.04mm$$

$$n = 1.4567, d = 4.04mm$$

e/m calculated from equation (5) above is then $= 1.48 \times 10^{11}$
Coulomb/Kg .



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

Cairo University

N.I.L.E.S

Laser Material Processing & Industrial Applications Dept.

ICS-UNIDO - NILES

***Training course on Laser Science and its Applied
Technology***

Cairo, November 9-21, 1998

Optical Engineering Lab.(1)

Supervised by:

Prof. Dr. Adel M. El Nadi

Ehab S. Awad

Tarek A. Habashy

Waleed S. Mohamed

1 – EXPERIMENTS ON FIBER OPTICS

1-INTRODUCTION

The achievement of low-loss transmission, along with the additional advantage of large information carrying capacity, immunity from electromagnetic interference, and small size and weight, has created a new technology, Fiber Optics Technology.

2-OBJECTIVES

- To observe total internal reflection (TIR) in dielectrics and relate such phenomena to the wave-guiding theory. The refractive index of a glass will be determined using TIR setup.
- To measure the numerical aperture of optical fiber.

3-RELATED THEORY

1) Ray optics:

Ray optics is the simplest theory of light. Light is described by rays that travel in different optical media in accordance with a set of geometrical rules (Geometric optics).

1.1 Law of Reflection:

The law of Reflection states that when a light ray is incident onto a reflective surface at angle θ_i from the normal, the reflected ray also leaves the surface at angle θ_r (Fig.1), i.e.:

$$\theta_i = \theta_r \quad (1)$$

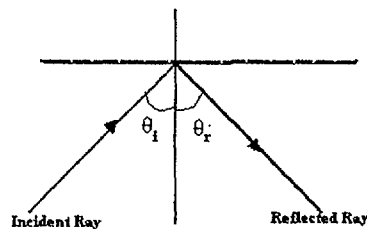


Fig.1: Law of Reflection

1.2 Law of Refraction (Snell's law):

This law states that when a light ray travels from one medium into another of different refractive index, it undergoes refraction at the interface, meaning its direction of propagation is changed. If the ray from medium n_1 is incident to the interface at angle θ_1 with respect to the normal, then it leaves the interface into medium n_2 at angle θ_2 given by the relation (Fig.2):

$$n_1 \sin \theta_1 = n_2 \sin \theta_2 \quad (2)$$

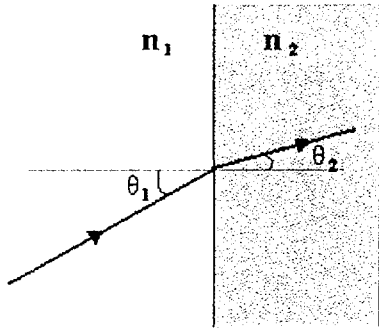


Fig.2: Law of Refraction.

2) Total Internal Reflection:

From Snell's law, one can find that if a light ray is to travel from a medium of higher index, n_1 , into second medium of lower index, n_2 , there exists a critical incident angle, θ_c , such that if the ray angle (measured from the normal of the interface) is greater than θ_c , the light ray will be reflected back into the first medium n_1 instead of passing into the second medium n_2 . This phenomena is called Total Internal Reflection (TIR), meaning that the light is 100% reflected. The critical angle θ_c can be calculated by setting $\theta_{t3} = 90$ degrees, such that:

$$\begin{aligned} \sin \theta_{i2} &= \sin \theta_c = n_1 / n_2 \\ \theta_c &= \sin^{-1} (n_1 / n_2) \end{aligned} \quad (3)$$

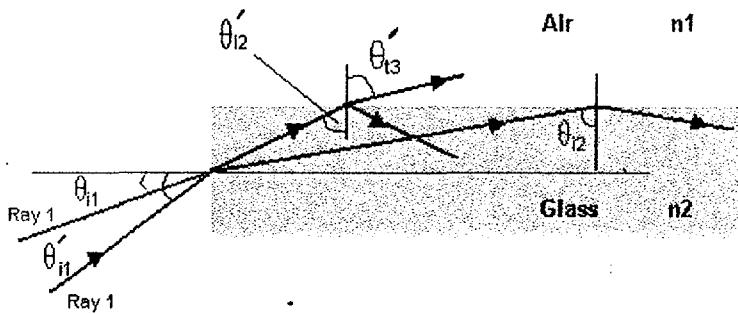


Fig.3: Dielectric Slab as a waveguide.

A rod of glass or plastic has the property of an optical waveguide because of the TIR effect at the interface between the dielectric and air. This is illustrated in Fig.3.

In Fig.3, ray1 is guided by the slab because θ_{i1} is small enough such that $\theta_{t2} > \theta_c$ between the glass and air, and thus TIR occurs at the boundary. On the other hand, ray 2 is not guided because θ'_{i1} is too large such that $\theta'_{i2} < \theta_c$, so that it does not undergo TIR at the boundary (radiation mode).

3) Optical Fiber Structure:

An optical fiber basically consists of the core and cladding. The optical fiber guides light waves by TIR between the core and cladding interface, where the cladding is of lower refractive index than the core. Both the core and the cladding are usually made of glass, but they are chemically doped to have different

refractive indices. Usually, for strength and protection purposes, a layer of plastic coating, called the buffer or jacket is coated on the cladding (Fig.4).

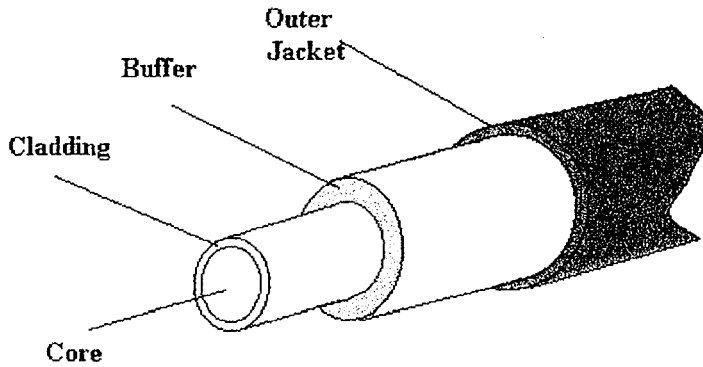
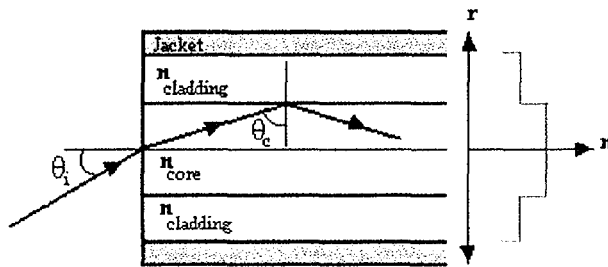


Fig.4: A typical Optical Fiber Cable.

Looking at the cross-section of the fiber in Fig.5, one sees that the cone of rays that will be accepted by the fiber is determined by the difference between the refractive indices of the core and cladding. The fractional refractive index difference is given by:

$$\Delta = (n_{core} - n_{cladding}) / n_{core} \quad (4)$$

Fig.5: Step-index fiber. The refractive index profile is shown on the right.



Because the refractive index of the core is a constant and the index changes abruptly at the core-cladding interface, the type of fiber in Fig.5 is called a **step-index fiber**.

The definition of the critical angle can be used to find the size of the cone of light that will be accepted by an optical fiber with a refractive index difference. In Fig.5, from Snell's law:

$$n_i \sin \theta_i = n_{core} \sin \theta_t = n_{core} \sin(90 - \theta_c) = n_{core} \cos(\theta_c)$$

$$= n_{core} \sqrt{1 - \sin^2(\theta_c)}$$

For optical guiding, $\sin(\theta_c) > n_{cl} / n_{core}$ or:

$$n_i \sin \theta_i \leq \sqrt{n_{core}^2 - n_{cl}^2} \quad (5)$$

The numerical aperture, NA, is a measure of how much light can be collected by an optical system, whether it is an optical fiber or a photographic lens. It is the product of the refractive index of the incident medium and the sine of the maximum ray angle, i.e.:

$$NA = n_i \sin \theta_{i,max} \quad (6)$$

The numerical aperture of step-index fiber is, from Eqs.5 and 6:

$$NA = \sqrt{n_{core}^2 - n_{cl}^2} = \sqrt{(n_{core} + n_{cl})(n_{core} - n_{cl})} \quad (7)$$

When $\Delta \ll 1$, Eq.7 can be approximated by:

$$NA \cong \sqrt{(2n_{core})(n_{core}\Delta)} = n_{core}\sqrt{2\Delta} \quad (8)$$

In most cases, the light is incident from air and $n_i=1$ allowing us to write:

$$\sin\theta_{max} = NA$$

4-EXPERIMENTAL SETUP

Part I:

1. Align the He-Ne laser so that the beam enters one face of the rectangular slab.
2. Rotate the slab until TIR occurs.
3. Observe the laser beam guided through the slab.
4. Measure the critical angle, and calculate the refractive index of the glass used.

Part II:

1. Obtain a 1m of fiber optic cable.
2. Align the He-Ne laser to one end of the fiber cable.
3. Make sure that the output beam from the fiber is a nice circular spot.
4. Place a target at about 20cm away from the output fiber end and use a ruler to measure the beam diameter D (as shown in Fig.6).

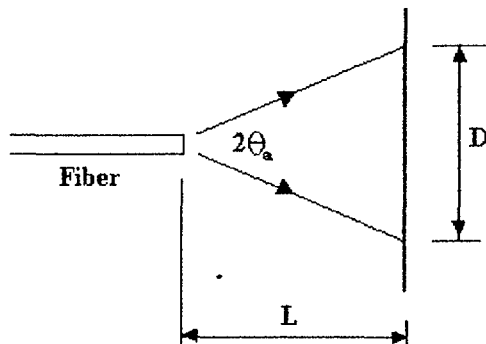


Fig.6: Beam Diameter measurement for calculation of NA.

5. Calculate the NA.

2- EXPERIMENTS ON HOLOGRAPHY

1-INTRODUCTION

The Word "Holography" comes from the Latin word "Holo - Graphien" which means "complete message" [1], i.e. a complete information about the object have been recorded. To do that, Two beams are used, instead of one beam in the ordinary photography, one is called the *reference beam* which comes directly from the source and the other is called the *object beam* which is reflected from the object. When illuminating the hologram with the reference beam, a virtual image of the recorded object is reconstructed at the original place of the object. When changing the position of the viewer, the eye cuts another group of rays coming from parts of the object that were hidden before.

2- TRANSMISSION HOLOGRAM

- During the recording process, if the reference and object beams were at the same side of the recording plate the hologram is called *Transmission hologram* (figure 1.a).
- In reconstruction process, the viewer and the reference are at opposite sides of the plate.
- The transmitted rays are diffracted such that a virtual image of the object is constructed at the extensions of the rays (figure 1.b).

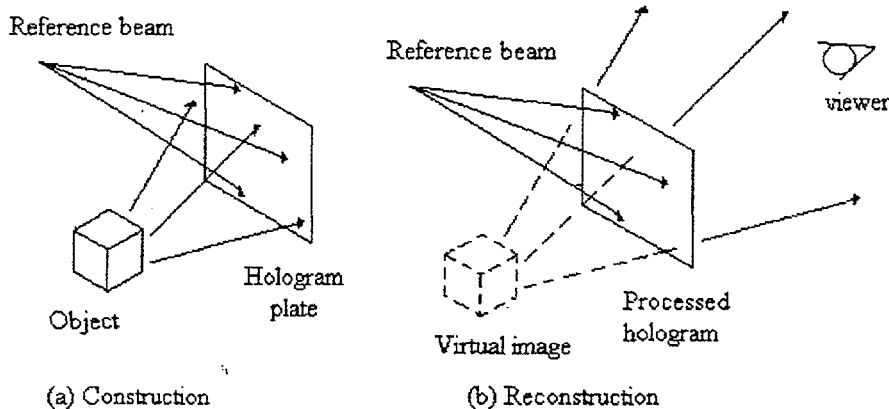


Fig.1. Construction (a) and reconstruction (b) of a transmission hologram.

3-REFLECTION HOLOGRAM

- During the recording process, if the reference and object beams were at opposite sides of the recording plate the hologram is called *Reflection hologram* (figure 2.a).
- In reconstruction process, the viewer and the reference are at the same side of the plate.
- The reflected rays are diffracted such that a virtual image of the object is constructed at the extensions of the rays (figure 2.b).

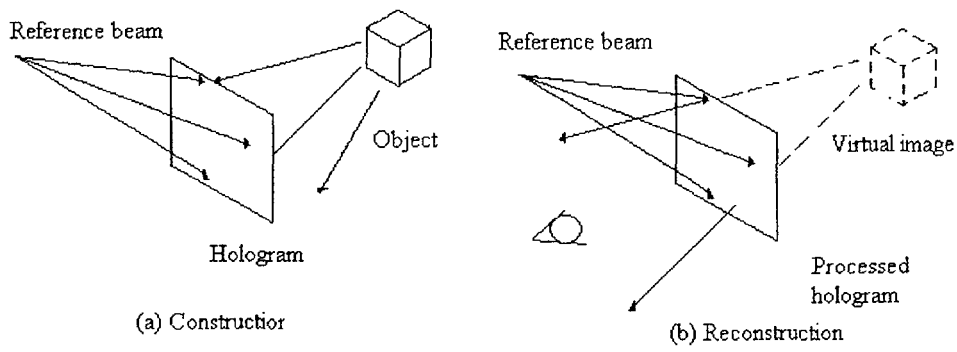


Fig.2. Construction (a) and reconstruction (b) of a reflection hologram.

4-Experimental Setup

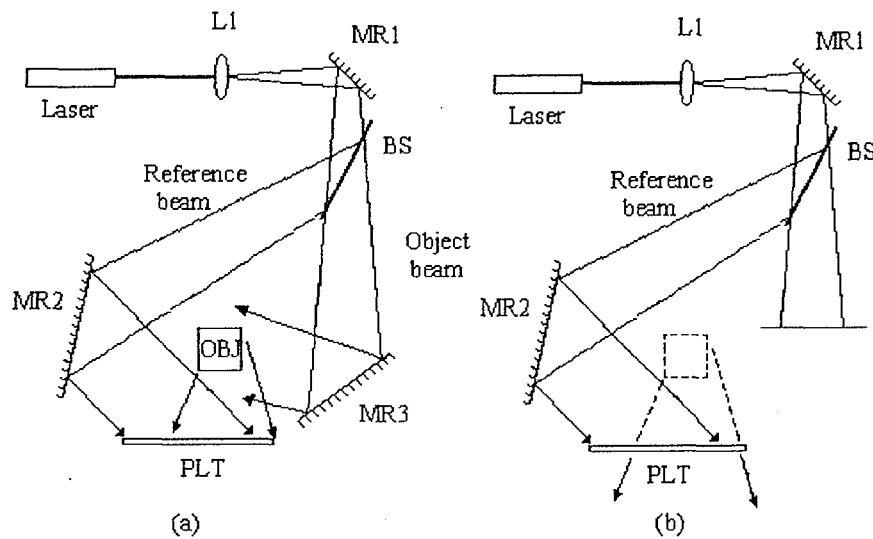


Fig.3 Setup for (a) recording and (b) reconstructing a transmission hologram

MR: Mirror, PLT: Holographic plate, BS: Beam Splitter and L: Lens.

-The setup for recording a transmission hologram is shown in figure 3.a.

-The setup for reconstructing a transmission hologram is shown in figure 3.b.

PLENARY LECTURES

1- Laser Dynamic Studies of Nanoparticles.

Prof. M.A.El-Sayed

Laser Dynamics Laboratory

School of Chemistry and Biochemistry

Georgia Institute of Technology

2- Non-Linear Spectroscopy

Prof. Sayd A. Ahmad

Bhabha Atomic Research Centre

Bombay – India

3- • Laser Induced Interstitial Thermotherapy (LITT) in Tumors Management

• Techniques of Laser Applications in Vascular Surgery

• Laser in Medicine and Surgery

H.P. Berlien

4- Thomson Scattering

- Principles of incoherent and collective scattering.

- Recent advances at very low densities, relevant for technical plasmas in plasma processing.

- Scattering at high densities like in the Bochum gas-liver pinch, where excellent spatial is obtainable.

- Scattering at very high densities as in fusion plasma results of S.G¹enses at Livermore will be presented.

H.J. Kunze

5- Coherent anti-Stokes Raman, Scattering Applied to Dielectric Barrier and Microwave Discharges for NO Removal

J. Uhlenbusch

Institute for Laser and Plasmaphysics, Heinrich-Heine-Univ. of Dusseldorf

Universitätsstr 1,40225 Dusseldorf, Germany

6- Technology Space Routing in Optical Communication

Lotfia M. El-Nadi

Univ. of Qatar, Doha, Qatar

7- The Understanding of mechanism of action of antimetabolic drugs: A Photochemical approach.

Prof. Palumbo

8-Applications of Lasers to Elemental Trace Analysis.

Prof. Denis Boudreau

Laval Univ., Quebec- Canada

9-Molecules in Strong Electromagnetic Fields

Prof. A. Bandrauk

10-Cellular Mechanism of Photodynamic Therapy and Low Power Light Therapy

Angelika Ruck

ULM, Germany

11-PDT: Basic Principles, Clinical and Commercial Aspects Relevant to Clinics.

Prof. T. Patrice

12-Laser flash Photolysis & Pulse Radiolysis – Complimentary Techniques to Study Free Radicals.

Prof. J. Mittal

Bhabha Atomic Research Centre

Bombay – India

13- Application of Laser Induced Fluorescence to Gaseous Discharges

Prof. E. Hintz

Bochum, Germany

14-Generation of Oxygen Reactive Species by Photoexcited RPE Pigments

Prof. T.Sarna

15-Picosecond Time-Resolved Electron Diffraction of Surface Phase Transitions

Prof. H. El-Sayed

16- Environmental Friendly Photosensitizers for Control of Medical Insects

Prof. Abd-El-Kader

17- Egyptian Experience in Low Intensity Laser Therapy.

Prof. E.-El-Negmy

18- UV Induced DNA Damage by Scattering Light from an Excimer Laser (193nm) Detected in Microbial Test Systems

Prof. Klous Weinckler

LASER DYNAMIC STUDIES OF NANOPARTICLES

**M. A. EL-SAYED
LASER DYNAMICS LABORATORY
SCHOOL OF CHEMISTRY AND BIOCHEMISTRY
GEORGIA INSTITUTE OF TECHNOLOGY
ATLANTA, GA, USA**

ABSTRACT

AS THE SIZE OF MATTER (METALS OR SEMICONDUCTORS) DECREASES, ITS PROPERTIES GREATLY CHANGE AS IS SIZE REACHES THE NANOMETER LENGTH SCALE. ITS ABSORPTION FREQUENCY AND MAGNETIC PROPERTIES SUDDENLY INCREASE AND BECOME SENSITIVE TO ITS SIZE, DUE TO THE INCREASED SURFACE-TO-VOLUME RATIO, PROPERTY OF THE SURFACE ATOMS WITH THEIR UNSATURATED VALENCY (E.G. ACTIVE CATALYSIS, SURFACE ENERGY AND ELECTRON TRAPPING AND SHAPE DEPENDENT PROPERTIES) BECOME DOMINANT. MATERIAL ON THE NANOMETER LENGTH SCALE THUS OFFERS THE NEW FUTURE TECHNOLOGIES, E.G. SUPER CATALYSTS, SUPER MAGNETIC RECORDING, IMAGING AND MEMORY STORAGE AS WELL AS NANO (AND NOT MICRO)-ELECTRONICS.

IN THIS PRESENTATION, ULTRASHORT LASER PULSES ARE SHOWN TO BE USEFUL IN MAKING, SHAPING, AND STUDYING SOME OF THE DYNAMIC PROPERTIES OF SOME METALLIC AND SEMICONDUCTOR NANOPARTICLES.

A- RESONANCE IONISATION SPECTROSCOPY

By

Dr. El Sayed A. Ahmed

**Chemistry Group Bhabha Atomic Research Centre Government of India
Trombay , Mumbai-400, India**

- 1- Experimental Techniques : Heat Pipe Ovens Thermionic Diodes, Resonance Ionisation Mass Spectrometry (RIMS), Time of-Flight Mass Spectrometers (Linear & Reflection Geometry), Calibration of observed Photoionisation resonances, Laser Enhanced Ionisation (LEI) Spectrometry.
- 2- Studies on Atoms and Molecules using Multiphoton Ionisation (MPI), Resonance Enhanced MPI, RIMS and LEI: Identification of New Energy Levels, Rydberg Series and Autoionising levels in alkaline earths and lanthanides. Studies of dimers and exotic molecular species produced in flames etc.

B-NON-LINER SPECTROSCOPY

1. Saturation, polarisation and phase conjugate spectroscopy for high resolution studies in Atomic Spectroscopy

Laser Induced Interstitial Thermotherapy (LITT) in Tumors Management

Hans-Peter Berlien

Dept. of Laser Medicine, Neukölln Hospital, Berlin, Germany

Techniques of laser application in vascular surgery

Hans-Peter Berlien

Dept. of Laser Medicine, Neukölln Hospital, Berlin, Germany

Laser in Medicine and Surgery

Hans-Peter Berlien

Dept. of Laser Medicine, Neukölln Hospital, Berlin, Germany

**PRINCIPLES OF INCOHERENT AND COLLECTIVE THOMSON
SCATTERING**

BY

Prof. Hans-Joachim Kunze

**Institut Fuer Experimentalphysik V, Ruhr-Universitaet,
Bochum, Germany**

- 1- Recent advances at very low densities , relevant for technical plasmas in plasma processing .
- 2- Scattering at high densities as in the Bochum gas-liner pinch, with excellent spatial resolution.
- 3- Scattering at very high densities such as for fusion plasmas (with experiments done at Livermore by S. Glenzer)

Coherent anti-Stokes Raman Scattering applied to Dielectric barrier and Microwave Discharges for NO Removal

J. Uhlenbusch

Institute for Laser- and Plasmaphysics, Heinrich-Heine-University of Düsseldorf,
Universitätsstr. 1, 40225 Düsseldorf, Germany

Nitric oxide (NO) is one of the most dangerous gaseous air contaminants and contributes considerably to environmental pollution. NO_x is produced by combustion processes, in which more than half of the NO_x formation is caused by traffic, especially road traffic. The catalytic reduction of NO produced by Otto-cycle engines is very efficient, but limited to fumes of stoichiometric mixtures. Modern engines having low consumption are leanly operated and their exhaust fumes still contain oxygen, a fact which makes the reduction of NO by a conventional catalyst more complicated. Therefore, novel removal techniques have been developed to reduce the NO-emission. Amongst others, the dielectric barrier discharge (DBD) and the microwave discharge (MWD) are proposed for exhaust purification.

In the first part of the lecture some properties of the discharge plasma generated in a DBE are summarized with emphasis on the chemical processes occurring in a N_2 , O_2 , NO mixture exposed to the discharge. A numerical procedure (solution of the rate equations) confirms that there are two major reaction channels for the nitric oxide removal: the desired reductive path, which produces O_2 and N_2 by conversion of NO, and the unwanted one, which in the first step generates NO_2 by oxidation and in the second step (if H_2O is present) nitric acid.

The numerical results are compared to particle density and temperature measurements with the so called coherent anti-Stokes Raman scattering (CARS) technique. To determine the density of minorities like NO, a modified CARS technique with particular direction of polarization of the laser beams involved in CARS is applied. These measurements describe the temporal behavior of the vibrational temperature of N_2 in a good agreement with calculations and confirm the depletion of NO by the discharge in a pure N_2 , NO environment. It is striking that the vibrational temperature of N_2 at atmospheric pressure remains below say 800 K,

whilst the gas temperature stays at room temperature. Therefore vibrationally excited N_2 molecules do probably not contribute to NO reduction. A good agreement between the experimental and theoretical data of the vibrational temperature is achieved, using an electron density of $5 \times 10^{13} \text{ cm}^{-3}$ for a single streamer of the DBE and an electron temperature of 5 eV. This result is often mentioned in detailed streamer publications.

In a further series of experiments a microwave discharge ($f = 2.45 \text{ GHz}$) at atmospheric pressure with the option of cw and pulsed operation has been studied. In contrast to the DBE, all temperatures (T_{rot} , T_{Gas} , T_{vib}) in a cw MWD at atmospheric pressure are nearly in thermodynamic equilibrium as in an arc. Typical values are 7000 K at a microwave power level of $P = 800 \text{ W}$. An NO reduction of about a factor of 6 (starting at 2500 ppm NO) has been achieved when NO is added to a pure N_2 plasma undergoing an expansion through a nozzle.

The reduction decreases with increasing start concentration, which reduces, however, to a (e.g. a reduction factor of 2 at 14000 ppm) NO feeding. In case of N_2 , O_2 , NO mixtures a MWD acts as an NO source, in particular at cw operation.

In a pulsed mode, however, less NO is produced if the pulse length and the repetition rate are reduced. If NO of concentration C_1 is added to an O_2 , N_2 mixture, which produces a certain amount of NO (on its own), say C_2 , the resulting NO concentration is smaller than $C_1 + C_2$. Forthcoming experiments tend to very short microwave pulses of high peak power with the tendency to keep at first all heavy particles relatively cold, second to increase the vibrational temperature of N_2 to support reactions between vibrationally excited N_2 and NO, and third to reduce the dissociation of O_2 .

Numerical programs have been developed which allow a simultaneous solution of the Boltzmann equation, the Master equation and the rate equations for the chemical processes expected in the discharge.

TECHNOLOGY OF LASER SPACE COMMUNICATION

Free Space Routing in Optical Communication

*Lotfia M. El Nadi**

Physics Dept., Faculty of Science, University of Qatar, Doha, QATAR

Abstract

Free space optical routing presents a revolutionary opportunity to enhance the free space optical communication. The optical systems to be used in free space optical routing are based on laser (light) beams that are guided independently without optical fibers.

In this new technology both conventional optical components as well as newly evolving optical systems are used to : collect, split, direct, focus and switch the light beams between arrays of processing and receiver devices.

The advantages of the free space routing over other known interconnecting methods will be elaborated. The fundamental units of free space optical routing systems and Architecture will be compared to those using optical fibers. Details of optical interconnection components will be explained and discussed as to future technological challenges in ultrafast all-optical devices. Concentration will be on optical technologies that would supplement electronic networks associated with telecommunication switches, digital computing systems and analog neural networks.

////////////////////

* On leave of absence from : Physics dept., Faculty of Science, Cairo University,
Giza, EGYPT.

Cellular mechanisms of Photodynamic Therapy and Low-Power-Light Therapy

Angelika Rück, Nermin Akgün, Klaus Heckelsmiller and Rudolf Steiner
ILM, Helmholtzstrasse 12, D-89081 Ulm, Germany
Tel: (49) 731 1429 16
Fax: (49) 731 1429 42
e-mail: angelika.rueck@ilm.uni-ulm.de

Introduction: A light-induced photobiomodulation is actually discussed with respect to the stimulating response of low-power laser-irradiation, as well as processes, which are inducing the programmed cell death (apoptosis) as a consequence of light-activation of photosensitizers in Photodynamic Therapy (PDT). Besides other parameters cell stimulation and apoptosis seem to depend on the fluence (radiant exposure) as well as fluence rate (irradiance). Reports in the literature have shown, that cell stimulation is correlated with enhanced redox-activity of the respiratory chain, mainly due to light absorption of respiratory chain enzymes. Besides, reactive oxygen species (ROS), like $^1\text{O}_2$, O_2^- , H_2O_2 , etc. are discussed to act as signal transduction molecules activating downstream reactions which lead to stimulation or apoptosis. This could be proved by the inhibitory effect of antioxidants with respect to stimulation as well as apoptosis. Mainly debated is however the cooperating role of other signaling systems like calcium or pH.

The efficiency of PDT is dependent on the localization of a photosensitizer in the target tissue and inside the cells. However, the localization can change with different application times and also during irradiation. This includes photobleaching of the drug, but also relocalization and spectral modifications. The biodynamic, which is shown to be different for lipophilic and hydrophilic photosensitizers influences the photodynamic efficiency.

Materials and methods: The following methods were used to observe time and light induced modifications of the fluorescence behavior of clinically relevant photosensitizers:

- confocal laser scanning microscopy
- time-resolved microspectrofluorometry

Cell cultures were incubated with various incubation times with lipophilic and hydrophilic photosensitizers, and coincubated with ionsensitive probes for Ca^{2+} as well as pH detection. In addition to investigations in cell culture, the biodynamic of different photosensitizers was observed by using the non-animal in vivo system of the chorioallantoic-membrane (CAM) of fertilized eggs.

Results and discussion: Lipophilic photosensitizers were found to accumulate in high amounts in the vessels, especially in the endothelial cells, whereas hydrophilic drugs were cleared from the plasma more quickly and accumulate in the tumor cells after a short incubation time. The light-induced cellular dynamics were also found to be different for lipophilic and hydrophilic photosensitizers. Whereas photobleaching was observed for lipophilic drugs as protoporphyrine IX, zinc phthalocyanine (ZnPc), etc. the fluorescence intensity of hydrophilic photosensitizers (for example tetrasulfonated aluminumphthalocyanine AlPcS₄) exhibited a sigmoid like nonlinear dynamic behavior. The dynamic process was analyzed further and correlated with the quantitative phototoxic response of the cells as well as intracellular Ca^{2+} inhomogeneities. ZnPc exhibited a high photodynamic activity. 50% of the cells were killed at a fluence less than 0.1 J/cm^2 . In contrast, for AlPcS₄ the phototoxic response was significantly reduced, moreover, at very low doses below 1 J/cm^2 a significant

stimulation of cell proliferation was observed. In addition, transient Ca^{2+} -changes in the cell nucleus and cytoplasm were observed during the light-induced process for AlPcS_4 but not for ZnPc and correlated with the induction of apoptosis.

During Methylene Blue (MB^+)-PDT nonlinear redox-reactions were induced inside cell cultures. This could be deduced from local fast changes of the MB^+ -fluorescence as well as pH during irradiation of single cells. The biomodulation of MB^+ seems to be correlated with the nonlinear production of ROS. Below a threshold dose the reducing ability of MB^+ prevents tissue from oxidative damage. However, above this dose, as a point of no return, MB^+ acts as an extremely potent oxidant.

Literature:

- (1) Orth, Rück, et. al., Lancet 345 (1995), 519-520.
- (2) Schick, Rück, et. al., J. Derm. Treat. 8 (1997), 17-19.
- (3) Rück, Heckelsmiller, et. al., Photochem. Photobiol. 66 (1997), 837-841.

PDT: Basic principles and experimental results relevant to clinics.

T. Patrice, V. Vonarx, Y. Lajat

Laser Dpt, Neurosurgery, Laennec Hospital, BP 1005, 44093 Nantes, France

PDT is based on the selective retention of a non toxic substance called sensitizer by some tissues among which cancers and made toxic under light exposure.

Whatever the sensitizer used photodynamic therapy (PDT) will alter several cell sites and organelles according to the cell sensitizer distribution and the level of destruction for each site will depend on the sensitizer concentration. Some damages are not lethal and will be repaired when some others will lead to the cell death after various delays. However sensitizer concentration varies according to incubation time with the sensitizer. Light illumination will thus have different effects according to time. This evidences the tremendous importance of cell kinetics in sensitizer uptake. It is even more in solid tumors that are made of many cell types only some of them being malignant with various kinetics and biochemical patterns although arising from a single mother cell. Determining an optimal moment for irradiation is a challenge that can be approached through experimental procedures. Cell uptake monitored by fluorescence determination of a given sensitizer evidences that the maximal fluorescence varies from one cancer cell type to the other. Such an heterogeneity is clearly a general drawback of any anticancer chemotherapy including PDT.

This is even worse when using a prodrug (ALA) said to be more likely metabolized into a photosensitizer (PPIX) in cancer cells than in normal cells. In this case cancer cells exhibit various cell kinetics at the mitotic level but also differences in their enzymatic equipment.

HPD-PDT decreased cancer cells adhesiveness to co-cultured endothelial cells. We correlated this decrease to a reduced rate of metastasis when PDT treated-colonic cancer cells were reinjected to syngeneic rats. When non metastatic cells were PDT treated they did not acquire the metastazing phenotype. More recently we noticed that BPD or photofrin PDT-treated cells had a reduced expression of their CD44V antigens a molecule known to be overexpressed in metastatic cells. Best indications for PDT are early cancers, meaning by there that tumours are not metastatic at time of diagnosis. It is thus of importance to characterize PDT safety to make it sure that we do not impair the prognosis of the disease we are treating.

Performing PDT is aimed at treating tumour cells instead of cancer cells. It is thus of critical importance to treat at the optimal ratio of sensitizer concentration between the both types. Light delivery has also to consider that the window of maximal efficacy is extremely narrow if we consider the short exposure time as compared to the long delay between drug injection and light delivery. Conditions of treatment imply a perfect tumour staging, determination of drug concentration and optimization of parameters for light delivery. The main problem is linked to light exposure which is impossible to analyse or even to modelize. Indications for PDT are non oncological and oncological. They altogether represent a huge market probably as big as the whole X-ray market. The main advantages, simplicity, absence of pollution, efficacy make PDT attractive for both developed countries but also and may be mainly for developing countries were it is not possible to develop X-rays or the use of radioactive isotopes. To-day 15 companies are strongly investing in PDT worldwide. However the development is limited by surprisingly the low number of new and original molecules susceptible to be patented and then brought to marketability. In addition not all the wavelengths are available. Since a chemical is identified then a laser source has to be specifically designed to match with the appropriate wavelength. Finally clinical assays have to be designed for each indications suggesting long delays for a company before getting money.

Application of Laser Induced Fluorescence to Gaseous Discharges

Eduard Hintz

Institut fuer Experimentalphysik, Ruhr-Universitaet
44780 Bochum, Germany

Abstract. The principles of the Laser Induced Fluorescence (LIF) are summarized. A survey is given of atoms which are of interest in gaseous discharges, together with wavelengths accessible with tunable lasers. Of special interest are those elements, the first ionization state of which is also accessible to laser excitation. Arrangements for obtaining tunable laser radiation are briefly discussed.

Abnormal glow discharges in noble gases with metal cathodes (Fe, Mg, Ti) with gas pressures around 0.1 mbar, an electrode voltage of about 1 keV and with current densities of the order 1 mA/cm^2 are investigated in this paper. By means of the LIF of atoms and ions the transport and ionization of the sputtered metal atoms and ions and of the metastable argon atoms are studied. These studies include in particular

- The absolute measurement of the axial density distributions of metal atoms, of the metal ions and of the metastable argon atoms
- The measurement of the population density of the fine structure of the ground state of the Fe/Ti-atoms, and, based on these data, the determination of the axial distribution of the gas temperature,
- The measurement of the velocity distribution of metal ions, in particular, the determination of their drift velocity and of the associated electric field in the plasma.
- Since the electron temperature of the discharge plasma in general is very low ($\leq 0.1 \text{ eV}$) the attempt is made to heat this plasma to electron temperatures $\geq 1 \text{ eV}$ by means of high frequency electric fields. Changes in the velocity distribution of the ions are reported

The observed density profiles are described by theoretical models, taking into account the main ionization and loss processes, including Penning ionization. Finally, some results on the measurement of atomic hydrogen in an rf-discharge and on metal vapour densities in vacuum arcs are briefly described.

Laser Flash Photolysis & Pulse Radiolysis – Complimentary Techniques for The Study of Free Radicals:

Lalitha J. Mittal¹ & Jai P. Mittal²

(1) Atomic Energy Jr. College, Bombay, India

(2) Bhabha Atomic Research Center, Bombay, India

ABSTRACT

Use of complimentary techniques of pulse radiolysis and Laser flash Photolysis will be discussed to understand the nature of the primary photoprocesses leading to various free radicals formation and photoionization .

The photophysical process leading to photoionization and photodissociation in the arylalkylamines benzylamine and benzhydrylamine were examined as a function of pH in aqueous solution using a KrF excimer laser. The main photolytic reaction observed for the amines is photoionization. The hydrated electron subsequently reacts with the amine leading to deamination when the amino group is in the protonated form, whereas, at pH 11.0 e_{aq} adds to the benzene ring. Photodissociation processes occurring via C-H and C-C bond rupture are also observed and various transient intermediates can be identified by generation in appropriate pulse radiolysis experiments under suitable conditions. The two-step photoionization occurs via the triplet excited state as indicated by the heavy atom effect. In contrast, photodissociation occurs via monophotonic process.

PICOSECOND TIME -RESOLVED ELECTRON DIFFRACTION OF SURFACE PHASE TRANSITIONS

BY

Hani E. El Sayed Ali

Old Dominion , University, Norfolk, Virginia, U.S.A

Recent progress in the use of picosecond time-resolved electron diffraction to probe surface phase transitions will be reviewed. In these experiments a picosecond laser pulse is used to heat the surface of a crystal, while a well synchronized electron pulse is diffracted off the surface to form a reflection high-energy electron diffraction pattern. Quantitative analysis of the diffraction pattern gives information on the surface structure and morphology. The high time resolution gives information on the dynamics of the laser-induced phase transition. The following topics will be discussed:

1. Instrumentation development for time-resolved electron diffraction
2. Surface temperature using the Debye-Waller effect.
3. Melting and superheating of low-index surfaces of metals.
4. Order-Order transformation and surface reconstruction of Ge (111)

I would like to travel on the following dates:

Depart Nov.11 TWA 7756 Norfolk-New York 6:06 pm – 7:24 pm

Nov.11 TWA 888 New York-Cairo 9:50 pm- 3:35 pm (Nov.12)

Return Nov. 20 TWA 891 Cairo-New York 1:05 am-6:00 am.

Nov. 20 TWA 7753 New York-Cairo 8:25 am-9:50 am.

Environmentally Friendly Photosensitizers for the Control of Medical Insects

*Mahmoud H. Abdel-Kader, sayed El sherbini and Tarek El Tayeb,
National Institute of Laser Enhanced Science (NILES), Cairo University, Egypt*

*Giulio Jori and Thameur Ben Amor
Department of biology, University of Padova, Italy*

It has been recognized that without light life on the earth is impossible, but it is clear that light can also have quite some detrimental effects on the living cells and tissues.

In this work, we represent our results of the use of porphyrin derivatives as a photoinsecticides. This class of compounds is environmentally friendly with a high photosensitizing activity towards biological systems. These compounds are already approved for medical use in the photodynamic therapy of tumors and other diseases. Photosensitizing dyes (porphyrin and phthalocyanine derivatives) which become toxic only when they are activated by sunlight are certainly characterized by a low environmental impact and a minimal risk for plant, animal and human ecosystems.

In our laboratory, we developed a novel method to use porphyrin derivatives as sunlight-activatable insecticides, for controlling two of the most common medical insects, i.e., *Culex pipiens* larvae and *Musca domestica*. Exposure of porphyrin-fed flies and larvae to direct sunlight or light solar simulator caused a decrease in the survival whose extent was modulated by irradiation fluence rate and total light dose.

The results reveal that for 10 $\mu\text{mol/mL}$ (*M. domestica*) and 0.07 $\mu\text{mol/mL}$ (*C. pipiens* larvae) of porphyrin in the bait, 100% mortality was obtained after 2 hours exposure in case of *M. domestica* and 1/2 hour in case of *C. pipiens* using fluence rate of 250 W/M^2 and 400 W/M^2 respectively. The potential applications of this novel technique will be discussed.

UV Induced DNA Damage by Scattering Light for
An Excimer Laser (193 μm) Detected in
Microbial Test Systems

By

K. Winckler

Institute f. Biophysics, Freie Universitaet Berlin

Dept. of Environmental Photobiology

Thielallee 63, D-14199 Berlin, Germany

Tel: +49-30-8382681 Fax: +49-30-8244058

E-Mail: xbiokw@mail.zedat.fu-berlin.de

ABSTRACT

The increasing use of high energy, short wavelength laser in technical and medical applications has brought up the issues of biological side-effects and safety aspects. During the introduction phase of excimer lasers, emitting at 193 μm , i.e., in the "far-UV" region, mainly in use in ophthalmology (mainly corneal surgery) we conducted tests to detect possible negative biological side-effects.

For this purpose we set up a very simple, easy to handle, fast and cheap test system. To get as near as possible to the regular targets in medical applications, i.e., eucaryotic tissue cells, we used the single cell eucaryote, the yeast *S. cerevisiae*, as model organism.

S. cerevisiae comes in a choice of well defined strains with ample mutant of different DNA repair capacity and specificity. One just needs to pick the "right" ones for the task.

By the example of the test for side effects of excimer laser irradiation of the eye this test system will be explained.

ABSTRACT

Egyptian Experience in Low Intensity Laser Therapy:- Research projects conducted at the Faculty of Physical Therapy, Cairo University.

By Prof. Emam H. Elnegmy, the Dean Faculty of Physical Therapy, Cairo University

Although Actino Therapy was used since the earlist written documents of man, it represents one of the most overlooked areas in the field of physical therapy.

The concept of laser was first developed in 1916 by Albert Einstein, it was realized by Ball labes and introduced by Meiman Teudeor in 1960. Two general classification of laser can be made, high power laser and low power laser. The difference is based on the optical energy of the device.

Currently there is a shift from invasive to non invasive techniques in diagnoses and therapy. The non thermal metabolic consequences of low intensity laser therapy has been of great interest to physiotherapy researchers.

Accepting this type of laser as noninvasive tool attracted our attention at the Faculty of Physical Therapy, Cairo University to participate in this area.

Eleven research projects were conducted to investigate the effect of low intensity laser therapy as an alternative to chemical therapy in pain control and in accelerating recovery of functional capacities in patients with ulcers, burns, musculoskeletal tissue injuries, caesarean sections, nerve roots injuries and dysmenorrhaea.

The investigation results were collected, treated statistically and interpreted, confirming efficacy of routine clinical use of low intensity laser therapy as aseptic, painless and noninvasive technique in pain control and in accelerating recovery following different body tissue injuries based on non thermal mechanism.

Several additional projects are still in progress at the Faculty, investigating clinical use of low intensity laser therapy as a noninvasive physical therapy tool.

SATURDAY 14 NOV.

O.1.A

	<p>Argon Laser Vascular Tissue Welding; Early Experiences By <i>Mohamed Helmy El-Batanouny, M.D.,*</i> <i>Mokhtar E.Aoda, M.Sc. Mohamed Abd-El Fatah, M.Sc., Mostafa Samy, M.Sc.</i></p>
	<p>He-Ne Laser Irradiation Stimulates Buffy Coat Lymphocytes to Proliferate <u>In Vitro</u> By <i>M.El Batanouny*, S. Korraa**, .O. Fekry*</i></p>
	<p>Effect of He-Ne Laser Irradiation On Stimulated Lymphocytes <u>In Vitro</u> By <i>M.El Batanouny*, S. Korraa**,</i></p>
	<p>Effect of Low Energy Laser on Healing of Chronic Leg Ulcer By <i>Mohamed El-Batanouny*, Azza Kamaly**, Mahmoud Saber***</i></p>
	<p>Diode Laser Ablation of Rabbit Liver Tissue In-Vivo and In - Vitro Comparative Study By <i>M.El-Batanouny*, Y.Sherif** and O.Fekry**</i></p>
	<p>Laser Induced Thermotherapy (LITT for BPH) By <i>Aref El-Sewoifi, M.Samy Ismail*, Hans-Peter Berlien*</i></p>
	<p>Photodynamic Fluorescence Diagnosis for Early Detection of Bladder Cancer By <i>Aref El-Sewoifi, M.Samy Ismail*, Hans-Peter Berlien*</i></p>
	<p>Endometrial Ablation With A New Laser Applicator and New Laser Power Distribution By <i>M.Samy Ismail, Hans-Peter Berlien</i></p>
	<p>The Role of Laser In Gynecological Endoscopy By <i>M. Amr El Noury* and Sherif Khatab**</i></p>

	<p>Interstitial Nd YAG Laser Photocoagulation on Uterine Myomas By <i>M.Amr El Noury, Sherif Khatab, Tamer Fouad, Amina Gamal El Din</i></p>
	<p>Different Treatment Modalities of Local Recurrences And Skin Secondaries of Breast Cancer: Photodynamic Therapy (PDT) Versus Laser Induced Thermotherapy (LITT) By <i>M. Samy Ismail, Hans-Peter Berlien</i></p>
	<p>In Vivo Measurement of Time – Dependent Drug Diffusion in Skin by Laser Remittance Technique By <i>H.A. Al-Attar and *B.M. Hassan</i></p>

Argon Laser Vascular Tissue Welding; Early Experiences (Experimental Study)

Mohamed Helmy El-Batanouny ,M.D., *
Mokhtar E. Aoda, M.Sc.,Mohamed Abd-El Fatah,M.Sc.,Mostafa Samy, M.Sc.

Department of laser Biological and Medical Applications, N.I.L.E.S.,Cairo University. Giza, Eygpt.
*Prof. of General &Vascular Surgery Faculty.of medicine and head of Laser Biological & Medical Applications
Department, Cairo University

Abstract

Despite decades of laboratory success in which the superiority of laser tissue welding has been touted , there has not been much clinical use of this technology . Perhaps one of the obstacle to acceptance is that laser techniques can be frustrating and unreliable, at least in inexperienced hand. The aim of this work is to record problems encountered during getting our experience for laser assisted vascular anastomosis(LAVA) . We present our observation to be as guide for beginner in the field of laser vascular welding .In this work, rabbits abdominal aorta and goats femoral artery were subjected to 1 cm arteriotomy and repaired by argon laser (514 nm). Variable laser parameters were applied with different technical procedure till whitish discoloration was noticed. Efficiency was evaluated by gross inspection for intact welded edges , by digital palpation for early patency, and follow up by Doppler ultrasound. Preliminary observations revealed that stable weld with early patency could be established using C.W., spot by spot laser impaction, systemic and local heparinization , and saline irrigation at room temperature. Further studies need to be done to evaluate this promising technique.

HE-NE LASER IRRADIATION STIMULATES BUFFY COAT LYMPHOCYTES TO PROLIFERATE IN VITRO

*M. El Batanouny**, *S. Korraa***, *O. Fekry**

* National Institute for Laser Enhanced Sciences- Cairo University

** National Centre for Radiation Research and Technology -Atomic Authority of Egypt

Abstract

The objective of the study was to investigate the mitogenic and mutagenic effects of He-Ne laser irradiation (632.8 nm) on human peripheral lymphocytes *in vitro*. We used the cytokinesis-block micronucleus assay which incorporates cytochalasin B to inhibit cytokinesis while karyokinesis proceeds normally leading to the appearance of proliferating lymphocytes as binucleated cells and the appearance of micronuclei in cases of genotoxicologically affected cells. Thus buffy coat leucocytes were exposed to He-Ne at the power density 10 mW at doses of laser power energies of 1,2,3 and 5 Joules per cm² and cells were cultured in media 199 without any supplementations for 24, 48, 72 and 96 hours adding cytochalasin B 24 hours before harvesting of cells. Our results showed that laser induces lymphocytes to proliferate throughout the four consecutive days post the experiment. The non-significant difference in the frequency of micronuclei between pre and post laser irradiation indicates that He-Ne laser at such power energies 1,2,3 and 5 joules per cm² are non mutagenic. These results shade the light over the mechanism encountered by lymphocytes in the process of He-Ne laser induced wound healing and provide further proof to the safety of the use of such clinical modality.

Effect of He-Ne Laser Irradiation On Stimulated Lymphocytes In Vitro

*M. El Batanouny **, and *S. Korraa***,

** National Institute for Laser Enhanced Sciences- Cairo University*

*** National Centre for radiation Research and Technology -Atomic
Authority of Egypt*

Abstract

Genotoxic effects of He-Ne laser (632.28 nm) irradiation on human peripheral lymphocytes in the presence and absence of the mitogen phytohaemagglutinin was investigated using the cytokinesis block micronucleus assay. Buffy-coat human leucocytes were irradiated with He-Ne (10 mW) at power energies of 1, 2.5, 5, 10 and 15 joules/cm² and cultured in media 199 without any supplements in the absence and presence of phytohaemagglutinin for 72 hours adding cytochalasin B 28 hours before harvestation of culture. Our results showed increased frequency of micronuclei in cells dually exposed to He-Ne laser and phytohaemagglutinin when compared with cells irradiated only with laser beam. Also a minor increase in the level of the frequency micronuclei in cells exposed only to 15 joules was observed. Results indicate that the He-Ne laser irradiation at and below 10 joules is safe for in vitro investigations on lymphocytes provided that it should not be applied with any other potential mitogen.

EFFECT OF LOW ENERGY LASER ON HEALING OF CHRONIC LEG ULCER

By

Prof. Dr. Mohamed El-Batanouny*, Dr. Hisham Shokeir,
Dr. Azza Kamaly***, Dr. Mahmoud Saber******
**Professor of General and Vascular Surgery, Faculty of Medicine,
Cairo University.**

**** Lecturer, National Institute of Laser Enhanced Science ,
Cairo University**

***** Assistant specialist of Rheumatology and Rehabilitation,
Ministry of Health**

****** Physician in National Institute of Laser Enhanced Sciences.**

Low output laser irradiation has been found to stimulate biological processes and wound healing. According to Mester(1985) and other works laser can stimulate the healing of ulcer with refractory nature to therapies.

Our aim of that trial is to evaluate the efficacy of low power laser in treating chronic leg ulcer unresponsive to conservative treatment. Thirteen patients were included in this study. All had chronic leg ulcers, two patients had ischaemic ulcer and three patients had diabetic foot ulcer. The rest of the patients had post phlebitis limbs. Five of the patients had more than one ulcer. Duration of ulcers ranged between 1-17 years (mean 4 years). All the patients received He.Ne. 632.8nm, 10 mw power, 1-4 Joule/Cm². The sessions were three times per week. Four patients had complete healing and the rest of the patients showed decrease in ulcer size.

It is concluded that low energy laser therapy is an effective modality in treatment of chronic leg ulcer resistant to conventional line of therapy.

Diode laser ablation of rabbit liver tissue , In-vivo and In-vitro comparative study

M.El-Batanouny* , Y.Sherif** and O.Fekry**

N.I.L.E.S

Abstract:

This experimental study was carried out aiming to compare and quantify diode laser (980 nm / 20 w CW) ablation of rabbit liver tissue in -vivo and in-vitro. The study involved measuring of the depth and the width of the holes produced. The velocity of ablation was determined from the crater depth measurements using the least-square linear regression method. A complete video system used to monitor the process dynamics through an operating microscope.

The study showed that for the same laser parameters there was no significant change in the ablation velocity between the in-vivo and in-vitro study. However, there was a significant change in the crater diameter. The study also identifies three main phases in the process of ablation: first, phase of coagulation that is characterized by surface blanching; second, phase of water vaporization that started with explosive vaporization (pop-corn); third, phase of carbonization and combustion of residual organic compounds.

* M.El-Batanouny: Professor of General and Vascular Surgery, Faculty of Medicine and National Institute for Laser Enhanced Science (N.I.L.E.S), Cairo University.

**Y.Sherif: National Institute for Laser Enhanced Science (N.I.L.E.S), Cairo University.

** O.Fekry: National Institute for Laser Enhanced Science (N.I.L.E.S), Cairo University.

ENDOMETRIAL ABLATION WITH A NEW LASER APPLICATOR AND NEW LASER POWER DISTRIBUTION

M. Samy Ismail, Hans-Peter Berlien

Dept. of Laser Medicine, Neukölln Hospital, Berlin, Germany

Dept. of Gyn. and Obst., Al-Azhar University, Cairo, Egypt

Dept. of Gyn. and Obst., University Hospital Benjamin Franklin, FU Berlin

Abstract

With the development of optical fibers capable of transmitting laser energy, lasers have steadily gained acceptance over the last decade for use in performing endoscopic and hysteroscopic surgical procedures. One such laser, the Nd-YAG, is particularly well suited for photocoagulation of the endometrium as a result of its high power and transmission through fiberoptics. Currently, laser endometrial ablation undercurrent using the bare fiber. We are starting to use the side fire laser fiber in combination with the bare fiber to provide an ideal intrauterine delivery for laser energy according to the uterine cavity geometry and light dosimetry distribution. The technique is comparable to roll ball coagulation provides high efficiency and safety for complete endometrial destruction due to deep and homogenous penetration depth of the Nd-YAG irradiation and the great advantage is to perform the procedure in non contact and under visual control.

The Role of laser in Gynecological` endoscopy

M. Amr El Noury* and Sherif Khatab**

*Lecturer, Gynecology, Department of Biological and Medical applications
National Institute for Laser Enhanced Science (NILES), Cairo University

**Professor, Gynecology. Kasr El Eini, Cairo University

The current trend in medicine has become directed towards minimal invasive interference. The rapid progress in technology, including the fiber-optic cables, light sources, video camera and safety in insufflators has contributed to the safety and application of this concept. The easy delivery of laser energy through the endoscopes, either as a free beam or through fibers, has contributed to the minimal invasive effect because of the characteristics and predictability of the laser effect on the tissues. The uses of different wavelengths of laser in minimal invasive procedure in Gynecology and endoscopy will be presented.

SUNDAY 15 NOV.

O.1.B

	<p>Improvement of Visual Functions After Nd-YAG Laser Posterior Copsulotomy By <i>Dr. Mansour H. Ahmed, M.D, Dr. Yasseer Soliman, MD., Dr. Essam Abd El Ghafar, MD.</i></p>
	<p>Photoablation of Lid Lesions Using CO₂ Laser By <i>Dr. Ibrahim Taher, MD, Dr. Mona Soliman, MD</i></p>
	<p>The Effectiveness of Low Intensity Laser Therapy In Post-Traumatic Wound Healing and Skin Graft <u>A Case Report</u> By <i>Mona Sayed, PTD and Nahid Hussiny, PTD</i></p>
	<p>Laser – Assisted Lingual Tonsillectomy (L.A.L.T.) By <i>Dr. Yousry M. Mostafa, M.D. and Prof. Dr. Farouk Safwat, M.D. et al</i></p>
	<p>Laser Therapy of Haemangioma In Children By <i>Shokeir H., (MD) and Soliman M., MD.</i></p>
	<p>Clinical Application of Nd-YAP Laser in Endodontics By <i>Dr. Med.Dent. Ahmed A. Hassan</i></p>
	<p>CO₂ Laser Application in Gingival Lesions, Gingivectomy and Gingivoplasty By <i>Mouchira S.El-Din, Mushira M. Dahaba</i></p>
	<p>Comparative in vivo Evaluation of the Antibacterial Effect of Nd:YAG Laser Irradiation on the Root Canal Microorganisms By <i>Mouchira Salah El-Din*, Tarek A. Harhash**</i></p>
	<p>Preliminary In Vitro Evaluation of The Temperature Change During Intracanal Application of Nd:YAG Laser By <i>Mouchira Salah El-Din*, Hala Z. Mahmoud**, Tarek A. Harhash</i></p>
	<p>Preliminary Scanning Electron Microscopic Evaluation of Root Canal Wall Dentin Following Nd:YAG Laser Irradiation By <i>Mouchira Salah El-Din*, Hans-George Gräber**, Tarek A. Harhash***, Ahmed A. Hassan</i></p>
	<p>The Challenge of Transmyocardial Laser Resvation (TMLR) For Management Patients Having Coronary Artery Disease By <i>Abd El-Ghany M. Abd El-Ghany MD., Yehia Badr Ph.D*</i></p>
	<p>The role of Corticosteroids in Laser Therapy of Hemangioma By <i>El Gohary H.A and El Wakil T. F.</i></p>

	<p>Atmospheric Effects On Space Propagation of Laser Beam Qatar Space Laser Communication (QSLC) Project</p> <p>By Lotfia El Nadi* Latifa Al Houty and Magdy M. Omar*</p>
	<p>The KTP Laser In the Treatment of Bening Pigmented Skin Lesions</p> <p>By <i>Soliman M., MD. And Shokeir H., (MD)</i></p>
	<p>Diode Laser Ablation of Rabbit Liver Tissue In-Vivo and In - Vitro Comparative Study</p> <p>By <i>M.El-Batanouny*, Y.Sherif** and O.Fekry**</i></p>
	<p>Prinipals Of Incisional And Excisional Biopsy Using The Laser</p> <p>By <i>Dr. Yousry M. Mostafa, M.D.</i></p>

Improvement of Visual Functions After Nd-YAG Laser Posterior Capsulotomy

By

Dr. Mansour H. Ahmed, M.D.,

Dr. Yasser Soliman, MD,
&

Dr. Essam Abd-El Ghafar, MD,

Ophthalmology Department,
Cairo University

Abstract Page

Purpose: To detect the relation between posterior capsular pathology in pseudophakic patients and contrast sensitivity function and glare disability.

Method: 50 eyes with different grades of opacified posterior capsule undergoing Nd-YAG laser posterior capsulotomy, were subjected to contrast sensitivity function testing with and without glare disability evaluation both before and after laser intervention.

Results: Marked reduction in contrast sensitivity function especially with the use of a glare source was noted that matched with the patients' complaints. This reduction was much improved after doing the Nd-YAG posterior capsulotomy and the patients' complaint disappeared.

Conclusion: Contrast sensitivity testing is more accurate than the Snellen visual acuity test in cases of after cataract (secondary cataract) in assessing visual sharpness. In fact, One can look at contrast sensitivity and glare disability testing as being close to the process of seeing. The work proved that posterior capsular pathology, whatever minute and clinically insignificant, is considered a problem-to the patient that should not be overlooked and to be dealt with properly.

Photoablation of Lid lesions using CO2 laser

Dr Ibrahim Taher, MD, Ophthalmology

Dr Mona Soliman, MD, Dermatology

Department of Medical and biological applications (NILES)

Abstract

The CO2 laser emits light at a wavelength of 10600 nm, and is selectively absorbed by water. Therefore the selectivity for tissues with high intracellular and extra-cellular water content, regardless of color.

Cutaneous lesions can either be excised with CO2 laser if the beam is focused or vaporized if the beam is defocused. Additionally super-pulsed CO2 lasers have been used because of their ability to emit controlled train of short duration, high energy pulses that can further minimize thermal damage to the surrounding normal tissue.

Objective:

To assess the efficacy of CO2 laser ablation of different lid lesions.

Methods:

Thirty eight patients with different lid lesions; xanthelasma, basal cell epithelioma, syringoma, trichoepithelioma, skin tags, verruca vulgaris and epidermal verrucous nevus were treated with CO2 laser (DEKA) either by C.W mode or superpulsed mode, duty ranging from 2 – 6%.

Results:

Treated lesions showed regression and good cosmetic outcome.

Results were satisfactory in most cases treated and patients were encouraged to treat contralateral lesions.

Conclusion

CO2 laser photoablation is an effective method in treating selected lid lesions with short recovery period and it may be the treatment of choice in certain benign lesions.

The Effectiveness of Low Intensity Laser Therapy in Post-Traumatic Wound Healing and Skin Graft A Case Report

Mona Sayed . PT.D. and Nahid Hussiny. PT.D

ABSTRACT

This trial was designed to test the hypothesis that LILT enhance the speed and quality of post-operative wound healing after skin graft. We report on this paper on a middle-aged male patient with a traumatic wound which untreated correctly at first resulting in foot gangrene, this resulting in extensive skin excision and needed for skin grafting procedure. LILT was then used after removal of splinting : He-Ne LILT was applied on the wound for 20 minutes at three times per week pases followed by stretching and strengthening exercises for the concerned muscles for another 20 minutes. The same procedure was used for three months period. A noticeable improvement was seen in both the condition of the wound and the levels of pain sensation. The function abilities and gait pattern was significantly improved. These observations confirm the efficacy of LILT in wound healing .

LASER-ASSISTED LINGUAL TONSILLECTOMY (L.A.L.T.)

By

**Dr. Yousry M. Mostafa, MD, Dr. Farouk Safwat, MD, Dr Abd El-Halim Ahmed, MD
Dr. Adel Malek, MD, Dr. Ahmed El-Kharbotly, MD.**
(NILES, Cairo University)

ABSTRACT

The lingual tonsils together with the lymphoid tissues of the pharynx constitute the Waldeyer's ring which regresses after the childhood, but occasionally hyperplasia of the lingual tonsil can be seen. The lingual tonsillitis seems to develop most frequently in young adults who have had palatine tonsillectomy.

The anatomical position of the lingual tonsil and the absence of a well developed capsule between the tonsil and the tongue musculature make the surgery difficult. Conventional surgery such as electrocoagulation, scalpel surgical dissection, excision with special lingual tonsillotome, and cryosurgery may also lead to incomplete excision(subtotal), severe haemorrhage, severe post operative pain, and epiglottis edema with airway obstruction as well as the frequent necessity of a tracheostomy in the postoperative period.

Although medical therapy is still the first line of treatment of lingual tonsillitis, multiple methods of laser resection and ablation of lingual tonsil have been devised utilizing the CO₂, the KTP, and the Nd :YAG lasers. The laser offers the advantages of resection with minimal edema, less bleeding, decreased pain by sealing lymphatics and nerves and precise control if used properly and may prevent damage to the underlying musculature. These advantages may all help to achieve more satisfactory results, to prevent major complications and to reduce the need for tracheostomy.

Eighteen cases of chronic lingual tonsillitis were treated surgically using CO₂ laser ablation under general anaesthesia. Following laser application, no dysphagia was observed secondary to epiglottic edema and no major complications occurred. After complete healing (2-3 weeks), nine patients (50%) were symptom-free, five patients showed a significant improvement (27.8%), two patients showed slight improvement (11.1%) and two patients noted no improvement (11.1%). The total success rate was about 77.8% (excluding the cases showing slight or no improvement).

In general, we concluded that Laser-assisted lingual tonsillectomy (LALT) by CO₂ laser was proved to be the appropriate solution for lingual tonsillar hyperplasia or non-responding chronic lingual tonsillitis where the results were more satisfactory without major complications. Our results agreed with most of the surgeons, in the literature, that Laser-assisted lingual tonsillectomy by CO₂ laser vaporization is a simple safe technique and is a highly reliable surgical procedure with good rate of success if the rules of laser safety are respected.

PRINCIPALS OF INCISIONAL AND EXCISIONAL BIOPSY USING THE LASER

By

*Dr. Yousry M. Mostafa, M.D.
(N.I.L.E.S.)*

ABSTRACT

Using the principals of physics armed with a basic knowledge of surgical pathology, laser could be used successfully for incisional and excisional biopsies due to many reasons. The ability of the laser to provide a bloodless field and to greatly minimize the lateral tissue damage enables the surgeon to perform these biopsies perfectly and safely.

Concerning the incisional biopsy, where the lesion is violated, the laser obviate the risk of blood loss and the need to suture the wound following the biopsy. There are two important points which must be put into consideration when performing incisional biopsy. The first is the lateral zone of thermal damage and the factors affecting it. The second caveat is that incisional biopsy, even with a laser, usually requires mechanical elevation of the biopsy which diminishes one of the advantages of laser use, so it is incomplete hands-off surgery.

As regards the excisional biopsy, great consideration must be given towards the zone of thermal coagulation around the lesion, and also towards protecting adjacent structures.

In this article the different laser techniques for taking both types of biopsy are discussed in details showing the common pitfalls of the laser techniques in this field.

Clinical application of Nd-YAP Laser in Endodontics.

Dr. med. dent. Ahmed A. Hassan.

National Institute of Laser Enhanced Science, Cairo University

The exact function of $\text{Ca}(\text{OH})_2$ as a root canal medicament is still unexplained. However, it is proven that its effect is due to its high pH which reduces the acidity of the inflammatory reaction and or its anti-microbial effect. It is also proven that the calcium deposit in the bone is gained from the blood and not from the $\text{Ca}(\text{OH})_2$ dressing. In the last ten years Laser treatment become more and more popular in different parts of Europe and the world. Nevertheless the use of Nd-YAG Laser 1.064 μm . for treatment of hard tissues is still not accepted in the United States. Many authors have proved the utility of Nd-YAP Laser for the reductions of bacterial count in the root canal, and the removal of the smear layer.

In this clinical study the effect of different forms of $\text{Ca}(\text{OH})_2$ as a root canal medication in the treatment of complicated root canal cases were compared with Nd-YAP Laser (wave length 1.34 μm). Laser power setting was 200 mJ at a frequency of 10 Hz in two visits, and no intracanal medicament was used. A radiographic evaluation was made once every 4 months in the first year and every six months in the second year. 60 patients were divided into three groups, 20 each. Patients' age was between 24 and 50 years. All had periapical radiolucent lesion ranges between 5 to 15 mm. in diameter.

The use of the Nd-YAP Laser reduces the treatment visits to only two visits by 60% of group III, only two cases needed more than three visits. While in Ca. 40% of groups I & II, filling was completed in two visits successfully. Control radiographs have shown a remarkable healing in the first six months of the treatment by Nd-YAP Laser, and signs of new bone formation were obvious by that time limit. A periodontal membrane space like and a laminadura were regenerated after 12 months of treatment in almost all the cases. Three patients of group I and two patients of group II and III had to be retreated surgically.

It can be concluded that the Nd-YAP Laser treatment in root canal can stimulate the healing and there is no negative effect on the perianical tissues. Even with large perianical lesion or abscess, we should not resort to a surgical treatment before using the conservative methods.

((Co₂ Laser Application in gingival Lesions, Gingivectomy and gingivoplasty)) .

Mouchira S. El-Din, Mushira M. Dahaba .

Faculty of oral and Dental medicine , Cairo University , Egypt .

This study was undertaken to evaluate the effect of application of Co₂ Laser in removal of gingival tissues and gingivectomy both clinically and by electron - microscope studies . A new method for correction of contour and interdental grooves was also presented . Laser wounds healed slower than scalpel wounds without any complain of operative - post bleeding nor injury to the surrounding tissues . Epithelial cells were more affected by the Laser beam than the remaining subepithelial cells .

Comparative in vivo Evaluation of the Antibacterial Effect of Nd:YAG Laser Irradiation on the Root Canal Microorganisms

Mouchira Salah El-Din^{*}, Tarek A. Harhash^{**}

abstract

The antibacterial effect of Nd:YAG laser irradiation on the root canal microorganisms was evaluated and compared with that of sodium hypochlorite in vivo.

The study was performed on thirty cases of both sexes that required endodontic therapy. The cases were randomly divided into 2 groups (I and II). Both groups were subjected to conventional endodontic preparation followed by bacterial sampling before root canal disinfection. Group I was subjected to intracanal Nd:YAG laser using a power of 3 W, a pulse rate of 15 pps, a pulse duration of 0.05 s, for repeated periods, each extended for 1 second, and an energy density of 294 J/cm². Group II was subjected to 2.62% of NaOCl solution. Both groups were subjected to bacterial sampling following root canal disinfection. The bacterial culturing technique and the bacterial counting provided qualitative data concerning the types of the microorganisms presented in the root canals, as well as quantitative data concerning the bacterial count before and after the disinfection procedures. The analysis of data revealed that laser attained a high ability of killing (99.9-100%) among all the bacterial populations whatever their count, while by increasing the count, the killing ability of NaOCl solution decreased.

* **Dr. Mouchira Salah El-Din:** Professor of oral radiology, Faculty of Oral and Dental Medicine, Cairo University.

** **Tarek A. Harhash:** Researcher in National Institute for Laser Enhancement Sciences, Cairo University.

Preliminary In Vitro Evaluation of The Temperature Change During Intracanal Application of Nd:Yag Laser.

Mouchira Salah El-Din^{*}, Hala Z. Mahmoud^{}, Tarek A. Harhash^{***}**

Abstract

The present study was conducted to calibrate temperature change occurred during the intracanal laser application with different Nd:Yag laser parameters (1.5, 3 and 5 watts). Thirty extracted single rooted teeth were divided into three groups (1, 2, and 3) each of these groups included ten teeth, and all of them were prepared by conventional endodontic preparation. The three groups (1, 2, and 3) were subjected to laser application with the three different parameters, 1.5, 3, and 5 watts of power respectively, with 15 pulses per second as pulse rate and 0.05 second as pulse duration in a period of 1 second. The temperature at the tooth apex as well as the apical third were recorded in the same time every 5 seconds for a period of 1 minute. The results revealed that the temperature rise resulted from applying the three different laser parameters at the tooth apex as well as the apical third ranged from 0.5°C to less than 4.5°C above room temperature (25.4°C). The results of this study are going to be used in an another in vivo study to evaluate the bactericidal action of Nd:Yag laser irradiation on the intracanal microorganisms.

*** Dr. Mouchira Salah El-Din:** Professor of oral radiology, Faculty of Oral and Dental Medicine, Cairo University.

**** Dr. Hala Z. Mahmoud:** Lecturer of oral radiology, Faculty of Oral and Dental Medicine, Cairo University.

***** Tarek A. Harhash:** Researcher in National Institute for Laser Enhancement Sciences, Cairo University.

Preliminary Scanning Electron Microscopic Evaluation of Root canal Wall Dentin Following Nd:YAG Laser Irradiation

Mouchira Salah El-Din*, **Hans-Georg Gräber****, **Tarek A Harhash*****, **Ahmed A. Hassan*****

abstract

Twenty extracted single rooted teeth were divided into four groups (a, b, c, and d), each of these groups included five teeth, all of them were subjected to conventional endodontic preparation. Group (a) was a non-laser (control) group while laser groups (b, c, and d) were subjected to laser application at the parameters of 1.5, 3, and 5 watts respectively, with 15 pulses per second as pulse rate and 0.05 second as pulse duration in repeated periods, each extended for 1 second. Scanning electron microscopic evaluation was performed to determine the effect of the three different laser parameters on the root canal wall dentin and to compare and match the results to that obtained from the control group. The results revealed that laser application inside the root canal with the parameters of 1.5 and 3 watts did not produce severe structural or morphological effects compared to that resulted from using the parameter of 5 watts. The results of this study are going to be used in another in vivo study to evaluate the bactericidal action of Nd:Yag laser irradiation on the intracanal microorganisms.

* **Dr. Mouchira Salah El-Din:** Professor of oral radiology, Faculty of Oral and Dental Medicine, Cairo University.

** **Dr. Hans-Georg Gräber:** Professor in the department of Conservative Dentistry and Periodontology, Aachen University.

*** **Tarek A. Harhash:** Researcher in National Institute for Laser Enhancement Sciences, Cairo University.

*** **Ahmed A. Hassan:** Researcher in National Institute for Laser Enhancement Sciences, Cairo University.

THE CHALLENGE OF TRANSMYOCARDIAL LASER RESVATION (TMLR) FOR MANAGEMENT PATIENTS HAVING CORONARY ARTERY DISEASE

BY

ABD EL-GHANY M. ABD EL-GHANY M.D., YEHIA BADR PH.D.*
NATIONAL HEART INSTITUTE, NATIONAL INSTITUTE OF LASER
ENHANCED SCIENCE*

Background:

There is a challenge between physical knowledge research and clinical studies of TMLR. A history of these technology and physics as well as current applications will be presented.

Methods:

An initial work for TMLR in Egypt had been made in April 1998 in N.H.I. and Naser Institute. TMLR was performed through left antero lateral thorocotomy on a beating heart by using excimer Laser with wave length 350nm and energ 30-40 μ jobs. pulse delivered by a fiber optics with metallic tips to create TMLR channels. TMLR had been done for 25 patients (21 male & 4 female) their mean age (u 40 years) whom had demonstrable ischemia in variable myocardium proved clinically, coronary engiography, stress thallium study, and by stress dobutamin echocardiography preoperatively 5 patients 56.15+9.5 had angina class II, 12 had angina class III and 8 had angina class IV, 4had previous history of mupcardial infraction, two had previous history of PTCA and one had previous history of CABG.

The inclusion and execlusion criteria had been mentioned. The performed TMLR channels were 35 \pm 8 per patient. All patients have been followed up 3,6,9 and 12 months post operatively.

Results:

There was no operative, hospital or 6 months post operative mortality. Follow up of the patients up to 6 months showed that 16 had no angina, 5 had angina class I, 3 had angina class II and one had angina class III. Most of the patients had significant increase in escessis tolerance with improvement of quality of life and sense of well being.

Conclusion:

TMLR appears to offer, new opportunities for treatment of coronary artery disease in situation were conventional CABG or PTCA with or without stenting revascularization options can not be used.

* Preferred presentation \diamond oral \diamond poster \diamond either of two

* Submitting Author Signature:

The KTP Laser In The Treatment of Benign Pigmented Skin Lesions

Soliman M. (MD) and Shokeir H., (MD)

National Laser Institute of Enhanced laser Science (NILES)

Department of Medical application (Dermatology Unit)

The KTP is a quasicontinuous laser obtained by doubling the frequency and halving the wavelength. In this modified laser system, the 1064 nm light is passed through an optical crystal composed of potassium titanyl phosphate (KTP) which converts the wavelength to 532 nm.

The green coloured KTP laser is transmitted through water and transparent media. It is scattered and absorbed within a depth of 1 to 2 mm in average tissue, though this varies considerably depending on the pigmentation.

The laser energy is delivered via an optical fiber which can be easily connected to a hexascan delivery device to distribute a uniform energy dose in a hexagonal pattern especially when treating large areas (Geronemus R.G. et al) Being absorbed by hemoglobin, oxyhemoglobin, melanin and tattoos, it can be used in the treatment of different skin lesions either vascular or pigmented lesions

In this study we try to evaluate the efficacy of KTP laser in the treatment of different pigmented skin lesions e.g. Becker's N., N.spilusand lentigines.

SUNDAY 15 NOV.

O.2.B

	<p>UV Laser Induced Fluorescence of Unirradiated and Irradiated Low Density Polyethylene By <i>Y.Bader*, Z.I.Ali** A.H. Zahran**, and R.M. Khafagy***</i></p>
	<p>Characterization of DSC and X-Ray Diffraction Parameters of Polyethylene Films By <i>Y.Bader*, A.H. Zahran**, Z.I.Ali** and R.M. Khafagy***</i></p>
	<p>Photoinduced Electron Transfer and Adduct Formation Between C₆₀/C₇₀ and Optically Active 1,1'-Binaphthyl 1-2,2'-Diamine By <i>Maged El-Kemary, Mamoru Fujitstuka and Osamu Ito*</i></p>
	<p>Atmospheric Effects On Space Propagation of Laser Beam Qatar Space Laser Communication (QSLC) Project By <i>Lotfia El Nadi* Latifa Al Houty and Magdy M. Omar*</i></p>
	<p>Effect of Laser Induced Damage In Si Solar Cells on Electrical Conductivity By <i>M. Mounir, S.B.A. El-Guiziri, Th. M.El-Sherbini, B.Ghazolin</i></p>
	<p>Measurements of the Populations Density of 4P and 5P States of Neutral Argon in Plasmas at Different Discharge Currents Using Optical Emission Spectroscopy(1) By <i>A.El Sherbini*, R.Denkermann**, S.Maurmann**, Th.M.El Sherbini</i></p>
	<p>Measurements of Population Density and Temperature of Argon Metastable in (IS₃) State Using the Tunable Diode-Laser Absorption Diagnostic Technique By <i>A.El Sherbini*, Th.Lokajczyk**, S. Maurmann**, Th.M.El Sherbini H.-J.Kunze**</i></p>
	<p>Investigation of LaserInduced Breakdown Spectroscopy for Cu-Target By <i>*F.F.Elakshar, Y. Gamal, M. Atta and M.A.Hafez</i></p>

UV Laser Induced Fluorescence of Unirradiated and Irradiated Low Density Polyethylene

Y. Bader*, Z. I. Ali** A. H. Zahran**, and R. M. Khafagy***

* National Institute Of Laser Enhanced Science (NILES), Cairo University Egypt.

** National Center for Radiation Research and Technology (NCRRT), P. O. Box 29
Madinat Nasr, Cairo, Egypt.

*** Faculty of Women for Art, Science, and Education, Ain Shams University, Cairo,
Egypt

Abstract

The auto fluorescence of unirradiated and γ -rays, thermal neutrons, argon ions (Ar^+) irradiated low density polyethylene (LDPE) films was investigated using a spectroscopic system incorporating a pulsed nitrogen (N_2) laser and optical multichannel analyzer (OMA). LDPE film was found to be auto fluorescent in the visible range (639 nm) after being pumped by pulsed N_2 laser in the ultraviolet (UV) range (337 nm). The fluorescence spectra was found to be affected remarkably by the type of irradiation and also on the absorbed dose showing different behavior either in the peak position or height. This behavior showed that LDPE film could be used as a fluorescence solar energy collector in the application of solar energy or laser dyes where it emits in a very important region in the visible region, which is having many applications especially for the photodynamic therapy.

Characterization of DSC and X-Ray Diffraction Parameters of Polyethylene Films

Y. Bader*, A. H. Zahran**, Z. I. Ali** and R. M. Khafagy***

* National Institute Of Laser Enhanced Science (NILES), Cairo University Egypt.

** National Center for Radiation Research and Technology (NCRRT), P. O. Box 29 Madinat Nasr, Cairo, Egypt.

*** Faculty of Women for Art, Science, and Education, Ain Shams University, Cairo, Egypt

ABSTRACT

Thermal properties as well as X-ray diffraction properties of polyethylene (PE) films were correlated against the γ -radiation absorbed doses using both differentials scanning calorimetry (DSC) and X-ray diffraction techniques. For γ -irradiated LDPE film, the onset temperature, peak position and beginning of melting peak decrease showing non-linear and linear behavior with the increase of the absorbed dose while heating and cooling, respectively. Also, the change in the heat of transformation (ΔH , J/g) with the increase of absorbed dose proceed in a different behavior where a two stages with a kink at absorbed dose of about 500 kGy take place. This behavior reflects the predominance of degradation process and crosslinking at lower and higher absorbed doses, respectively. On the other hand, the parameters characterizing X-ray diffraction pattern such as the number of diffraction patterns, peak position (2θ) and width of the diffraction pattern were studied versus the increase of absorbed dose. The obtained results reveal the abovementioned behavior.

Photoinduced Electron Transfer and Adduct Formation between C₆₀/C₇₀ and Optically Active 1,1'-Binaphthyl-2,2'-diamine

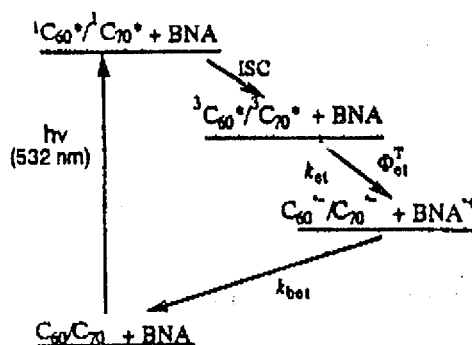
Maged El-Kemary,[§] Mamoru Fujitstuka[¶] and Osamu Ito^{*,¶}

[§]*Department of Chemistry, Faculty of Education, Tanta University, Kafr El-Sheikh, EGYPT,*

[¶]*Institute for Chemical Reaction Science, Tohoku University, Katahira, Aoba-ku, Sendai 980-8577, JAPAN.*

Photoinduced electron transfer and adduct formation between C₆₀/C₇₀ and 1,1'-binaphthyl-2,2'-diamine (BNA) have been studied by nanosecond laser flash photolysis and steady-state photolysis as well as circular dichroism measurements. Quantum yields (Φ_{et}^T) and rate constants of electron transfer from BNA to the excited triplet state of C₆₀/C₇₀ have been determined by observing the transient absorption bands in the near-IR region where the triplet states and anion radicals of fullerenes appear. Compared with the planar naphthylamine moiety, Φ_{et}^T values of perpendicular bichromophoric BNA are low due to hinderance of approach to round fullerenes. The formation of optically active adduct between C₆₀ and BNA in polar solvent was observed upon excitation with light at $\lambda > 330$ nm where both C₆₀ and BNA are light absorbing. The reaction mechanism for the optically active adduct formation can be explained as a result of the addition reaction of the N-centered radical formed by deprotonation of BNA^{•+} which is produced by direct photoejection.

SCHEME 1



ATMOSPHERIC EFFECTS ON SPACE PROPAGATION OF LASER BEAM QATAR SPACE LASER COMMUNICATION (Q S L C) PROJECT.

LOTFIA EL NADI ^(*) LATIFA AL HOUTY AND MAGDY M. OMAR ^(*)

Physics Department, Faculty of Science, Qatar University, Doha, QATAR

Abstract

The principle of optical communication can be expressed in a simple statement : "In an optical communication system, data from a transmitter to a receiver is transmitted via a modulated laser beam". The communication technology evolution reflects the continuously ongoing move towards higher carrier frequencies. A communication system thus achieves; higher bandwidths for data transmission and smaller antenna. When transmission is done by laser communication, several advantages emerge such as transmission of very high data rates, small telescopes, small terminals with low power consumption, full privacy and high jam resistance. In order to bring the laser communication technology out of the laboratory and put it into operational systems, some challenges has to be met, namely : a reliable laser transmitter with sufficient output power at good efficiency, an optical receiver with high sensitivity, a pointing acquisition and tracking subsystem, and optics to compensate the atmospheric attenuation. The main focus of our activities in Qatar is to design and develop a fully functional laser communication system for full on-ground performance verification. In this paper we present an overview of the program, the technical concept and technologies involved using semiconductor lasers and a brief overview about the current program status. Experimental data of atmospheric seeing measurements are reported where atmospheric turbulence due to variations of temperature, pressure and humidity of the atmosphere affect the properties of the propagating laser beam through free space.

////////////////////

* On leave of absence from : Physics dept., Faculty of Science, Cairo University, Giza, EGYPT.

Effect of Laser Induced Damage in Si Solar Cells on Electrical Conductivity

M. Mounir, S. B. A. El-Guiziri, Th. M. El-Sherbini, B. Ghazolin
Physics Department, Faculty of Science, Cairo University, Egypt

ABSTRACT

Laser induced damage in the Si Solar Cells was studied as a function of the number of laser pulses using laser radiation of wavelength 1.06, 0.532, and 0.355 μm obtained from a Q-switched Nd:YAG laser.

The effect of laser radiation on the electrical conductivity-temperature dependence was investigated. For the irradiated samples, the electrical conductivity proved to be always greater than that of the unirradiated sample at all temperatures, except for the case of 30 pulses of laser radiation of wavelength 0.532 μm . Furthermore, the electrical conductivity was found to decrease with the number of laser pulses. This may be attributed to the fact that the laser induced damage results in creation of traps within the p-n junction structure. The strongest damage, and consequently the strongest effect on the $\sigma(T)$ relation occurs for laser pulses of wavelength 1.06 μm , irrespective of the number of pulses

Investigation of Laser-Induced Breakdown Spectroscopy for Cu-Target

**F.F.Elakshar, Y.Gamal , M.Atta and M.A.Hafez*

National Inst. of Laser Enhanced Science, Cairo University.

**Phys. Depart., Faculty of Science, Azhar University.*

Abstract:

Cu-plasma was produced by focusing a pulsed Nd:YAG laser on the target in vacuum and in argon buffer gas at low pressure. The formed plasma was characterized by investigating the emission spectra and line Stark broadening. Validation of LTE conditions is examined. Electron density and temperature were determined using the Stark broadening of the profiles of Cu I lines and by using Boltzmann's plots. Temperature of 11250 °K - 7400 °K and density of $4.3 \times 10^{15} \text{ cm}^{-3}$ were estimated in the core of the plasma plume. Expansion of the plasma plume was studied by CCD camera and the characteristics of the plasma at 3.5 cm away from the target were measured using Langmuir single probe. Atomic processes occur during plasma decay are also investigated.

Saturday 14 Nov.	
P-I-A	
PHYSICS	
	<p>ON THE STUDY OF THE ELECTRON KINETIC PROCESSES IN THE BREAKDOWN OF ARGON BY OPTICAL LASER RADIATION</p> <p>BY <i>Yoser E. E-D – Gamal, L.EL.Nadi, Magdi O.Omara and B. Ghazoulin.</i></p>
	<p>STRUCTURAL PROPERTY BEHAVIOR OF POLYETHYLEN EXPOSED TO DIFFERENT TYPES OF RADIATION .</p> <p>By <i>H.M. Abou Zeid, Z.I.Ali, TH.M.Abdel Maksoud, and Rasha M.Khafagy</i></p>
	<p>STUDIES OF PROBLEMS CONNECTED WITH WIDE SCAN DYE LASER SPECTROSCOPY</p> <p>By <i>H.El-Kashef and G.E. Hassan</i></p>
	<p>LASER PRODUCED PLASMA FOR TITANIUM VAPOR LASER</p> <p>By <i>TH.M.El. Sherbini, M.Atta and H.Sharkawy</i></p>
PHOTOCHEMISTRY AND PHOTOBIOLOGY	
P-1-C	
	<p>THE USE OF PHOTOACTIVABLE PORPHYRIN FOR CONTROL OF CULEX PIPIENS LARVAE.</p> <p>By <i>M.H-Abdel –Kadr, S.A.M. El sherbini, and T.A.A. El Tayeb</i></p>
	<p>FEMTOSECOND LASER STUDIES ON DYNAMICS OF PHOTOCHEMICAL ISOMERIZATION AND PROTOLYTIC REACTION OF A MEROCYANINE DYE.</p> <p>By <i>Mahmaud H. Abdel-Kader, Clemens Burda, Stefan link and Mostafa Moustafa A. El-Sayed.</i></p>
	<p>PHOTOISOMERIZATION AND FLUORESCENCE CHARACTERISTICS OF 1-METHYL-4- (4'-AMINOSTYRYL) PEYRIDINIUM IODIDE AND 1-METHYL-4- (4'-AMINOSTYRYL) QUINOLINIUM IODIDE</p> <p>By <i>Sayed A.M.EL Sherbini, Mahmoud H-Abdel-Kader.</i></p>
	<p>ULTRA- STRUCTURAL LOCALIZATION OF A PHOTO-INSECTICIDE IN CULEX PIPIENS LARVAE</p> <p>By <i>E. M. SALAMA, S. A.EL Sherbini, M. H.Abdel-Kader and G.Jori</i></p>

TECHNOLOGY AND ENGINEERING	
	<p>ANALYSIS OF THE DOPPLER SCATTERING SIGNAL IN THE LASER DOPPLER VELOCIMETRY</p> <p>By <i>Mahmoud Fathy, Serry Bessar and Yaser EL- Sharkawy.</i></p>
	<p>A METHOD FOR MEASUREMENT OF THE STATIC LASER LIGHT SCATTERING OF A STANDARD POLYSTYRENE.</p> <p>By <i>A.El-Shaer, R Ghazy, B. El-Baradie and F.El-Mekawey</i></p>
	<p>LASER BEAM WELDING OF HEAT TREATABLE AND NON HEAT TREATABLE ALUMINUM ALLOYS</p> <p>By <i>S.El- Batahgy, M.Kutsuna, and B.Zaghloul</i></p>
	<p>REFRACTIVE INDEX-TEMPERATURE DEPENDANCE AND THERMO-OPTICAL SWITCHING USING LASERS COUPLDE TO OPTICAL FIBERS</p> <p>By <i>G.Abdel Fattah, A.Abd El-Monem and Y.A.Badr</i></p>
	<p>OPTICAL MATRIX-VECTOR MULTIPLIER USING A SINGLE LIGHT SOURCE AND MINIMUM NUMBER OF OPTICAL ELEMENTS.</p> <p>By <i>Waleed S. Mohammed, Adel M.EL Nadi and Ramy A. El-Ganayny</i></p>
	<p>CERENKOV MASER WITH A FINITE MAGNETIC FIELD</p> <p>By <i>Hafsa A.EL Hamawy, Adel M.El Nadi, Hanna A. Kirolous and Zaher N.EL-Sayed</i></p>
	<p>SIDEBAND' INSTABILITIES IN FREE ELECTRON LASERS</p> <p>By <i>Tamer M. Abu -Elfadl and Adel M. Elnadi.</i></p>
	<p>USING A LASER DIODE INTERFROMETER AS A DOPPLER VELOCIMETER</p> <p>By <i>Tarek A.Habashy, and Adel M.El Nadi</i></p>
	<p>IMPLEMENTATION OF OPTICAL BISTABILITY USING NON-LINEAR MICHELSON INTERFEROMETER</p> <p>By <i>Ehab S.Awad and A.M. El Nadi</i></p>
	<p>USING A LASER DIODE INTERFEROMETER AS A DOPPLER VELOCIMETER</p> <p>By <i>Tarek A.Habashy, and Adel M.El Nadi</i></p>

	<p align="center">IMPLEMENTATION OF OPTICAL BISTABILITY USING NON-LINEAR MICHELSON INTERFEROMETER</p> <p align="center">By Ehab S.Awad and A.M. El Nadi</p>
	<p align="center">MEDICINE O-1-D</p>
	<p align="center">¹³2-HYDROXY-BACTERIOPHEOPHORBID-A METHYL ESTER AND OCTA-α-BUTYLOXY-ZINC PHTHALOCYANINE AS PHOTSENSITIZER FOR FUTURE APPLICATION IN PDT: PHARMACOKINETIC EVALUATION</p> <p align="center">By <i>M.Samy Ismail, Hans-Peter Berlien</i></p>
	<p align="center">THE ROLE OF CORTICOSTEROIDS IN LASER THERAPY OF HAEMANGIOMA</p> <p align="center">By <i>El Gohary H.A. and El-Wakil T.F.</i></p>
	<p align="center">CO₂ LASER TREATMENT OF NASAL SARCOIDOSIS</p> <p align="center">By Adel Malek,MD, Farouk Safwat,MD, and Yousry Mostafa,MD.</p>
	<p align="center">LASER INDUCED INTERSTITIAL THERMOTHERAPY (LITT) IN TUMERS MANAGEMENT</p> <p align="center">By <i>M.Samy Ismail, Peter Berlien</i></p>
	<p align="center">ROLE OF CONDITIONING EXERCISE TRAINING FOR PATIENTS AFTER TRANSMYOCARDIAL LASER REVASCULARISATION</p> <p align="center">By <i>Zeinab M. Helmy and Mostafa H. Gad , Abd El-Ghany and M. Abd El-Ghany</i></p>

On the study of the electron kinetic processes in the breakdown of argon by optical laser radiation

Yosr E. E-D Gamal*, L. El-Nadi, Magdi O. Omara and B. Ghazoulin

* National Institute of Laser Enhanced Sciences, Cairo University, El-Giza, Egypt.

Department of Physics, Faculty of Science, Cairo University, El-Giza, Egypt.

Abstract: Basing on a previously developed electron cascade model by Evans and Gamal (1980), a study is performed to investigate the electron kinetics in the breakdown of argon by an optical frequency laser radiation ($0.53 \mu\text{m}$) with pulse length 15 ns. The model solve simultaneously the time dependent Boltzmann equation for the electron energy distribution function and a set of rate equations describing the rate of change of the population density of the formed excited states. The model takes into account all the possible electron, atom and photon interactions. The actual correlation between the cross-sections and rate coefficients of the possible physical processes and the electron energy is considered in this analysis. The computations are carried out under the experimental conditions of Rosen and Weyl (1987). The calculated breakdown parameters are found to be in accordance with the measured ones. Moreover, the importance of each loss process considered in this work as well as the contribution of the secondary ionization processes are tested over the pressure range examined experimentally. It is shown that at low pressure regime breakdown is governed by diffusion loss process while at high pressures recombination losses dominate. On the other hand, the secondary ionization processes are acting effectively to overcome these loss processes over the whole pressure range.

Structural Property Behavior of Polyethylene Exposed to Different Types of Radiation

H. M. Abou Zeid¹, Z. I. Ali², Th. M. Abdel Maksoud¹, and Rasha M. Khafagy¹

¹Faculty of Women for Art, Science, and Education, Physics Depart., Ain Shams University, Cairo, Egypt

²National Center for Radiation Research and Technology (NCRRT), P.O. Box 29, Madinat Nasr, Cairo, Egypt

ABSTRACT

A detailed study was performed on unirradiated low density and high density polyethylene (LDPE and HDPE) films as well as irradiated films with different types of radiation such as ⁶⁰Co γ -rays, thermal neutrons, fast neutrons and electron beam irradiation. The main goal of this study is to identify the structural changes occurring in PE films and to compare between the effect of different types of radiation using Fourier Transform Infrared (FTIR), Fourier Transform Raman (FT-Raman) and Ultraviolet (UV) spectrometric techniques. The results show significant radiation degradation, crosslinking and a change in the crystalline regions as well as the amorphous regions. The influence of γ -ray irradiation on the structure of PE was found to be more prominent compared to that of thermal neutrons and electron beam irradiation. Also, LDPE film is found to be sensitive to these types of radiation in accordance to HDPE because of its less degree of crystallinity.

Studies of problems connected with wide scan dye laser spectroscopy

H. El-Kashef and G. E. Hassan

Physics Department, Faculty of Science, Tanta University, Tanta, Egypt.

ABSTRACT

The nonlinearity of galvo-controlled laser frequency scanning Brewster plate is studied. Theoretical treatment for the deviation from linearity due to rotating of Brewster plate in laser resonator is calculated. The calculations based on the difference between the optical length at any selected incident angle and that at Brewster angle. A basic computer program is developed to calculate the following parameters: the optical length, deviation from linearity, driving current, free spectral range, and frequency change as a function of the incident angle. Furthermore, the calculation of a compensated displaced glass wedge for increasing the tuning range of laser resonator and its losses as a function of wavelength are discussed.

Laser Produced Plasma for Titanium Vapor Laser

*TH.M.El.Sherbini, M.Atta and H.Sharkawy
National Institute of laser Enhanced Sciences (NILES)
And Physics Department Faculty of science, Giza, Egypt*

Laser produced plasma is a useful technique to obtain a metal vapor in metal vapor lasers, especially for high melting metal [1]. Plasma was produced using pure titanium target irradiated with a pulsed switched Nd:YAG laser at its fundamental wavelength $\lambda = 1064$ nm with pulse duration of 7 ns and repetition rate of 5Hz. The laser power density on the target was 7×10^{10} W/cm². The energy of the laser 350 mJ, was suitable to generate a high density Ti plasma in vacuum and in the presence of argon gas as a background. The work was focused on measuring the plasma characteristics using spectroscopic methods and CCD (charged coupled device) camera. Promising plasma lines for pumping titanium vapour lasers are identified. The change of the intensities of these lines with the change in the argon pressure is recorded and is compared with the previous work by various investigators [2,3].

Spectroscopic measurements are used to determine the intensity of Ti I lines at wavelengths (625.8 nm, 550.39 nm, 549.79 nm, 549.01 nm) in vacuum and in different ambient gas pressure.

By using the intensities of the Ti I lines which are determined by spectroscopic measurements, the electron temperature T_e of the Ti plasma was estimated using Boltzmann plot. T_e was in the range of $18153 \text{ }^\circ\text{K} \pm 19 \%$ in vacuum (0.2 mbar). It was also determined in the presence of argon gas and the effect of the change of the pressure of Ar was studied. An increase of T_e with the increase of argon pressure was observed. T_e reaches the value of $19564 \text{ }^\circ\text{K} \pm 19 \%$ at 3 mbar and after that its value

is decreased down to about $16127 \text{ }^\circ\text{K} \pm 19 \%$ with increasing the pressure of argon up to 8 mbar. By using the intensity of the Ti I & Ti III lines which are determined by spectroscopic measurements, the electron density N_e was estimated by using relative intensities of spectral lines of successive ionization stages method (Ti III 548.13 nm, Ti I 550.39 nm). It is found that the value of N_e is in the range of $1.39 \times 10^{16} \text{ cm}^{-3}$ in vacuum (0.2 mbar). An increase of value of N_e with the increase of argon pressure was observed.

plasma velocity is determined in vacuum (0.2 mbar) and it was found to be of about $7.13 \times 10^5 \text{ cm / sec}$. The effect of the presence of argon at different pressures on plasma velocity is estimated. It is found that plasma velocity decreases with the increase of argon pressure until it reaches the value of $7.41 \times 10^5 \text{ cm / sec}$ at 3 mbar and after that it decreases with the increase of argon pressure until it reaches about $6.7 \times 10^5 \text{ cm / sec}$ at argon pressure of 8 mbar.

Radial distribution of the formed Ti plasma plume appeared by using the CCD camera. The radius of the plasma plume is increased with the increase of the argon gas pressure. Increasing argon pressure spreads the radial distribution of the plasma and the cooling rate increases.

Two spectral lines (at 551.4 nm & 625.8 nm) were identified in the plasma vapor which can be optically pumped to develop titanium vapour laser.

The experimental data will be presented and discussed thoroughly.

References:

- [1] K.Hirata and H.Ninomiya, *J.Appl.Phys.* 64 (1988) 6865.
- [2] Hermann, *J.Appl. Phys.* Vol. 7, April 1995.
- [3] D.Lacroix and G. Jeandel, *J.Appl. Phys.* 81 (10), May1997

The Use of Photoactivatable Porphyrin for Control of *Culex pipiens* larvae

M. H. Abdel-Kader, S. A. M. El sherbini and T. A. A. El Tayeb
National Institute of Laser Enhanced Science (NILES), Cairo University, Egypt

G. Jori
Department of biology University of Padova, Italy

It is well documented that porphyrin derivatives have been used as photosensitizing dyes. These derivatives exhibit several advantage features as compared with many chemical toxicants for insects. They are characterized by low environmental impact and minimum risk for plant, animal and human ecosystem. And known to be powerful photodynamic sensitizers due to its high quantum yields for generation of singlet oxygen, a cytotoxic oxygen derivative.

In this work we used a novel porphyrin derivatives as sunlight-activable photoinsecticides. The results obtained for controlling one of the most common medical insects, i.e. *Culex pipiens* reveal that the percentage of survival is affected strongly by different external factors, such as concentration of PD, light intensity, time of exposure to light and the source of light. Furthermore internal factors such as PD accumulation inside the insect body and the sites of accumulation should be taken into consideration. The results reveal also that 0.07 $\mu\text{mol/mL}$ of porphyrin in the bait, 100% mortality was obtained during 1/2 hour exposure under flocnce rate of 400 W/M^2 . The histological investigation will be discussed.

Femtosecond Laser Studies on Dynamics of Photochemical Isomerization and Protolytic Reaction of a Merocyanine Dye

*Mahmoud H. ABDEL-KADER**, *Clemens BURDA***, *Stephan LINK***
and *Mostafa A. EL-SAYED***

*National Institute of Laser Enhanced Science, Cairo university, Cairo, Egypt.

**Laser Dynamics Laboratory, School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, USA

The photoinduced cis/trans isomerization and proton transfer reactions are important processes in photobiological systems like Rhodopsin and Bacteriorhodopsin. The study of these processes in a model compound e.g. merocyanine dyes have found continuing interest because of their potential photobiological implications.

In previous work it was reported that the protolytic reaction of a simple merocyanine dye (M) coupled with cis/ trans photoisomerization constitutes a molecular reaction cycle which serves as a chemical model for the storage of information and subsequent regeneration of the information carrier.

In this study time resolved transient absorption spectra were measured using pulses of femtosecond duration with CPA-1000 system (Clark, MXR, Inc). A comparative study was carried out on the dynamic behavior of the titled compound (M) in different buffer solutions with constant ionic strength excited at $\lambda = 400$ nm.

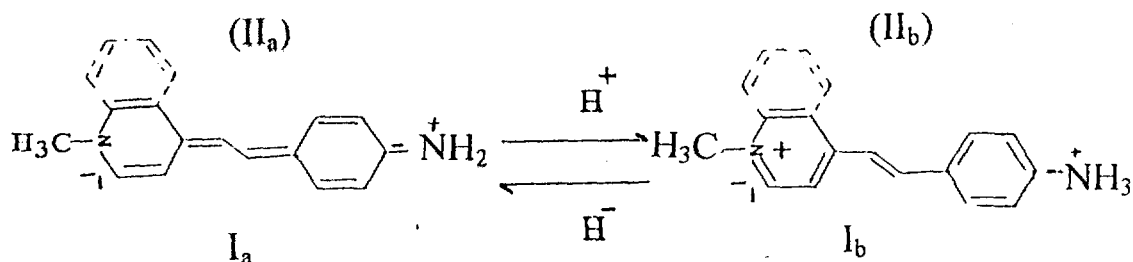
The results indicate that $S_n \leftarrow S_1$ bands of the fluorescent state cannot be detected due to the very small concentration of S_1 state, however the absorption spectra show negative values around $\lambda = 500$ nm and $\lambda = 560$ nm. These wavelengths coincide with those of the fluorescence bands. In basic solution an absorption peak is observed at $\lambda = 520$ nm, which cannot be recognized for acidic solution. Excited state kinetics monitored at different wavelengths are exponential with 17 ps lifetime for the basic form and 25 ps lifetime for the acidic form.

The results obtained are analyzed and discussed in terms of the details of the reaction mechanism.

**PHOTOISOMERIZATION AND FLUORESCENCE
CHARACTERISTICS OF 1-METHYL-4- [4-AMINOSTYRYL]
PEYRIDINIUM IODIDE AND 1-METHYL-4- [4-AMINOSTYRYL]
QUINOLINIUM IODIDE**

Sayed.A.M. El Serbini, Mahmoud.H. Abdel- Kader
National Institute Of LASER Enhanced Science (NILES),
Cairo University, Egypt.

Continuing our interest in merocynine dyes and their photobiological implication, we have synthesized the analogous titled compounds (I) and (II). Their photochemical cis/trans isomerization and their protolytic reaction were investigated in various organic solvents and buffer solutions.



Both (I) and (II) exhibit negative solvatochromic effects and they behave as monoprotic acid by protonation of the amino group, which is considerably more acidic in the first excited state than in the ground state. The pK_1 in the ground state =3.35 and $pK_1^* = 0.62$ and for compound (II) $pK_{II} = 3.24$ and $pK_{II}^* = 0.19$. The fluorescence quantum yields of I and II are ranging from ($\Phi_{fl} = 0.155 - 0.747$) and ($\Phi_{fl} = 0.43 - 0.37$) depending upon solvent used. It was found that the photochemical quantum yields are solvent dependent. The results obtained are discussed in relation to the photoisomerization reaction mechanism.

ULTRA- STRUCTURAL LOCALIZATION OF A PHOTO-INSECTICIDE IN *CULEX PIFIENS* LARVAE

*E. M. Salama*¹, *S.EL Sherbini*, *M.H.Abdel-Kader*², and
*G. Jori*³

1. Entomology Dep. Zagazig University, Banha branch, Banha

2. National Institute of Laser Enhanced Science (NILES),

Cairo University, Egypt.

3. Dep. of Biology, University of Padova, Italy

The ultra-structure localization of the porphyrin derivative on the midgut and the integument of the fourth larval instar of *Culex pipiens* was investigated and photographed by Geol 100 CX transmission electron microscope. In this study *Culex pipiens* larvae were treated with porphyrin derivative at concentration of 5×10^{-4} M/L. It was found to produce 100% mortality after half hour exposure to the 400 W/M^2 artificial light using solar simulator.

The ultra-structural examination showed that the normal lamellate cuticle heavily affected taking the shape of amorphous cuticular region. The endo- and exo-cuticle were not distinguishable. It was found that the epidermal cells underneath cuticle were distorted. The mitochondria exhibited a change of its appearance with irregular shapes. The fat body underneath the cuticle could be detected with visible vaculization. Muscle cells revealed the degenerated sarcoma with gaps and vacuoles. The discs have irregular shape and are distorted. Mid-gut cells appeared with cytoplasmic vacuoles. The Golgi bodies are fragmented into small particles. The rough endoplasmic reticulum is broken-down into separate vascular structures. Cytopathological observations confirmed the insecticidal efficiency of porphyrin derivative against *Culex pipiens* larvae.

Analysis Of The Doppler Scattering Signal In The Laser Doppler Velocimetry

Mahmoud Fathy*, Serry Besar and Yaser El-Sharkawy
M. T. C., Cairo.

Abstract

Laser Doppler Velocity measurement of fluid flow has been performed using fringe mode setup. The laser beam has been divided into two beams which are focused on the measuring volume with a defined angle. A photodetector received light scattered from seeding particles moving along with the fluid and converted it into electrical signal that contained the Doppler frequency. This signal has been analyzed by fast Fourier transform technique (FFT) in which the signal is converted from the time domain to the frequency domain. The technique has been performed by first filtering the signal by a low pass filter to remove high frequency noise and then the analogue signal has been converted to digital signal by ADC card PCL-71. The data is analyzed by FFT software which was adapted to handle Doppler signal data. The frequency response has been obtained from which the velocity of flow is calculated. With this technique a Doppler frequency of 1.7 kHz was obtained. The velocity of fluid flow was determined to be 16.34 cm/s with accuracy better than 1.3%.

A Method For Measurement Of The Static Laser Light Scattering Of A Standard Polystyrene

A. El-Shaer, R. Ghazy, B. El-Baradie and F. El-Mekawey.

Laser Lab., Phys. Dept., Faculty of Sciences, Tanta University, Tanta, Egypt.

A system for measurements of angular distribution of the scattered light intensity (30° - 150°) is constructed. The polymer sample under investigation is the standard polystyrene solved in benzene, dimethyl-formamide (DMF) and methylethyl-ketone (MEK). The scattering investigation is made for polystyrene solved in MEK for its high refractive index increment dn/dc . The Debye equation is applied to determine the molecular weight of Polystyrene, the second virial coefficient and the radius of gyration are determined. The results show a good agreement with the previous literatures.

LASER BEAM WELDING OF HEAT TREATABLE AND NON HEAT TREATABLE ALUMINUM ALLOYS

A. El-Batahgy*, M. Kutsuna**, and B. Zaghloul*

* Assoc. Prof. and Prof., WRD, Central Metallurgical R & D Institute, Cairo, Egypt.

** Prof., Material Processing Department, Nagoya University, Nagoya, Japan.

Abstract

The present investigation is concerned with characteristics of autogeneous laser butt welding of 3 mm thick heat treatable; 6061 and 2 mm thick non heat treatable; 5052, 5083 aluminum alloys. The effect of both laser welding parameters and backing strip on penetration depth, fusion zone configuration, porosity level and weld zone cracking was clarified using 5kW CO₂ laser machine.

All investigated alloys showed tendencies for porosity and solidification cracking as shown in Fig. 1-a for alloy 5083. It has been thought that porosity could be related to the vaporization of volatile alloying elements where magnesium can vaporizes at relatively low temperature which may result in unacceptable porosity in laser welds. However, EDX analysis of the investigated alloys indicated no significant difference in Mg and Si contents in both base and weld metals. This minimizing in material loss is related to careful control of the process parameters. Porosity was remarkably reduced by the increase in flow rate of shielding gas. This means that the levels of porosity in the welds are dependent on the laser welding procedures, where the use of optimized gas shielding can be effective.

It is known that the investigated aluminum alloys are susceptible to solidification cracking particularly, in the case of autogeneous welding. Consequently, some researchers have solved this problem using filler metals. However, this problem was solved in the present study using backing strip from same base metal (Fig. 1-b) and this could be applicable in production. This could be attributed to decreasing stress concentration at center of weld bead due to improving weld profile i.e. obtaining convex weld bead and decreasing penetration depth/width ratio. In other words, high speed laser welding (6 m/min) of aluminum alloys butt joints can be accomplished without the addition of filler metals, which are known to be a source for hydrogen-related porosity.

In comparison with alloys 5052 and 5083 as work hardenable materials, 6061 alloy as aged hardened material has experienced severe deterioration in mechanical properties due to softening in the fusion zone resulting from dissolution of strengthening precipitates in weld metal and HAZ. However, this can be recovered by post weld aging treatment at 200 °C.

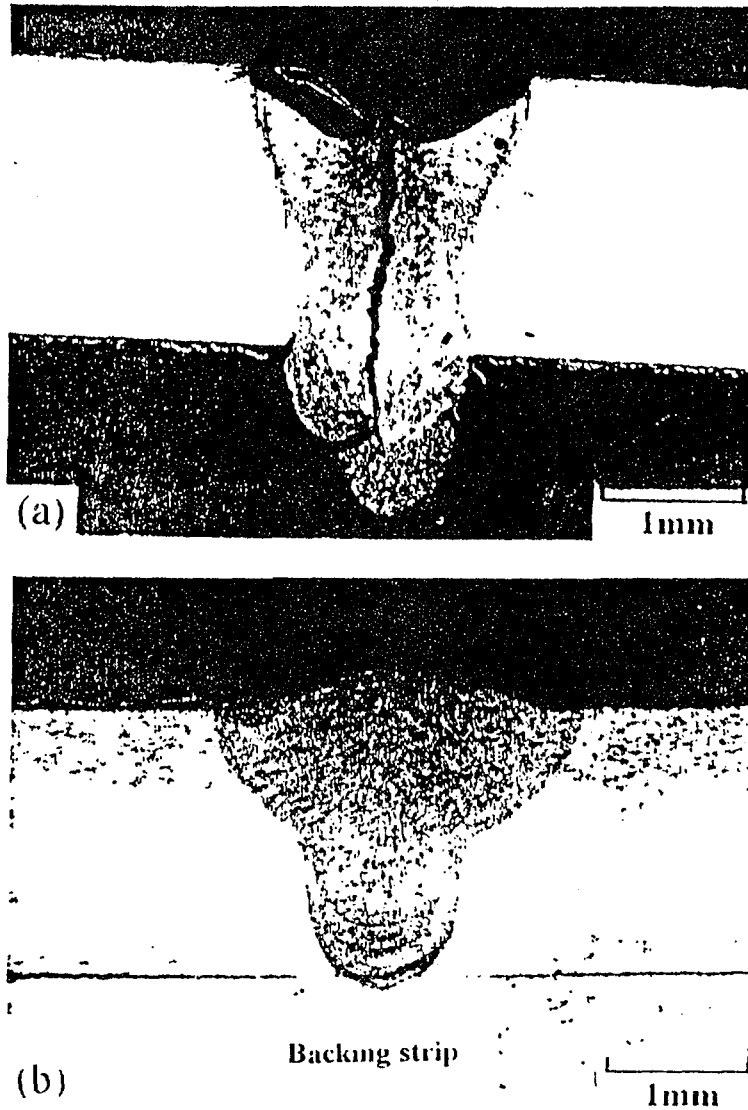


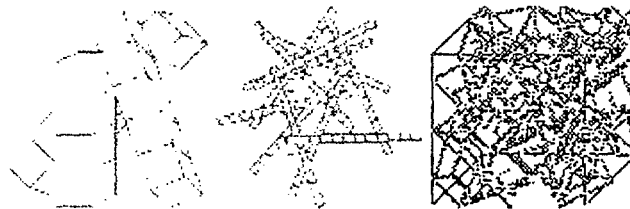
Fig. 1 Fusion zone configuration of alloy 5083 laser welded joints produced with (a) and without (b) backing strip
Laser power 4 kW. Welding speed: 6 m/min

REFRACTIVE INDEX-TEMPERATURE DEPENDANCE AND THERMO-OPTICAL SWITCHING USING LASERS COUPLDE TO OPTICAL FIBERS

G.ABDEL FATTAH, A.ABD EL-MONEM and Y.A.BADR :

National Institute of Laser Enhanced Sciences (N.I.L.E.S.), Cairo University, Egypt

The wax present in petroleum crudes primarily consists of paraffin hydrocarbons (C18 - C36) known as paraffin wax and naphtenic hydrocarbons (C30 - C60). Hydrocarbon components of wax can exist in various states of matter (gas, liquid or solid) depending on their temperature and pressure. When the wax freezes it forms crystals. the crystals formed of paraffin wax are known as macrocrystalline wax. Those formed from naphtenes are known as microcrystalline wax



Macrocrystalline , Microcrystalline, and Crystal Deposit Network of Wax

A hydrocarbon in pure state has definite boiling and freezing (or melting) points which can be measured in the laboratory. Knowing the intermolecular energy parameters or critical properties and acentric factor and/or refractive index of hydrocarbons one can predict their boiling point using vapor pressure correlations or such equations of state as vdW, RK, MMM, BWRS, etc. with various degrees of accuracy. However, such methods are not capable of predicting pure hydrocarbon freezing points. There are other methods which can be used to predict hydrocarbon and wax freezing (melting) point which include but not limited to: i. Variational statistical mechanical theory. ii. Density functional theory. iii. Dislocation theory.

In this work the concept of laser interferometry with fiber was used to monitor and determine the change in refractive index with temperature from the melting point up to 100°C with accuracy of 1/6 of degree Celsius.

The melting point of the paraffin wax which is defined here as the switching point was controlled and changed by mixing the paraffin wax with different concentrations and different types of natural oils.

Optical Matrix-Vector Multiplier Using a Single Light Source and Minimum Number of Optical Elements

Waleed S. Mohammed, Adel M. El Nadi

Material Processing and Industrial Applications Dept.,
National Institute of Laser Enhanced Sciences, Cairo University, Giza, Egypt

and Ramy A. El-Ganayny.

Electronics and Electrical Communications Dept., Faculty of Engineering,
Cairo University.

Abstract

Many optical elements are needed when designing optical vector-matrix processors. Also, a light source is assigned to each vector element. Usually, the light sources are incoherent to minimize the effect of interference. In this paper an optical processor is designed with a minimum number of optical elements (two lenses) using a single light source. A cylindrical lens expands the collimated beam in the vertical direction such that each vector element covers a column of the matrix to be multiplied. A spherical lens is placed at a distance f (focal length of the spherical lens) from the back focal plane of the cylindrical lens. The spherical lens will collimate the light diverging vertically and converge the light horizontally. At the back focal plane of the spherical lens, columns of the matrix will be added together and the resulted vector is detected. This work will be later extended to handle matrix-matrix multiplication.

Cerenkov Maser With a Finite Magnetic Field

Hafsa A. El Hamawy*, Adel M. El Nadi**, Hanna A. Kirolous
and Zaher N. El-Sayed

Electronics and Electrical Comm. Dept., Faculty of Engineering,
Cairo University, Giza, Egypt.

Abstract

In this work, we study waveguide Cerenkov amplification in a realistic situation. A general dispersion relation is derived for the electromagnetic hybrid modes when a cold electron beam is injected along a cold plasma-filled circular waveguide. Numerical solutions of this equation produce the wave dispersion and growth rate together with the mode structure. The problem is characterized by the presence of several important quantities such as the intensity of the finite external magnetic field, the plasma density, the beam energy and current and the radius of the waveguide. The influence of each of these quantities on the low frequency Trivelpiece-Gould-like modes was analyzed in detail. In general we found that the spatial amplification has a sharply-peaked maximum value for any particular set of parameters. We will also present the results of a theoretical analysis which compare well with the numerical results and explain the parameter dependence.

*On leave from Electrical Engineering Dept., Faculty of Engineering, University of Damascus, Damascus, Syria.

** Also with NILES, Cairo University, Giza, Egypt.

Sideband Instabilities in Free Electron Lasers

Tamer M. Abu-Elfadl and Adel M. El Nadi*

Elect. Engineering Dept., Faculty of Engineering, Cairo University,

Giza, Egypt.

Abstract

In this paper, we study the Free Electron Laser (FEL) sideband instabilities due to the synchrotron and the betatron oscillatory motion. The synchrotron oscillation is considered for a saturated main laser signal and the betatron oscillation is assumed in a planar FEL wiggler. Synchrotron oscillation is due to the motion in the ponderomotive potential well formed by both the main laser and the wiggler fields and it causes electron to oscillate in the longitudinal direction. The betatron oscillatory motion is due to the transverse nonuniformity of the wiggler field in the transverse plane, which makes electrons moving off-axis exhibit oscillation in the transverse plane. The stability of an extra-added perturbing sideband signal is studied. The sideband signal is taken inclined to the wiggler axis. The sideband signal is the perturbing signal, where its instabilities are analyzed. The sideband growth rate is studied under different electron distributions and inclination angles, where the growth is plotted versus the sideband frequency.

* Also with NILES, Cairo University, Giza, Egypt.

Using a Laser Diode Interferometer as a Doppler Velocimeter

Tarek A. Habashy, and Adel M. El Nadi
Laser Industrial Applications and Material Processing Dept.,
N.I.L.E.S, Cairo University.

Abstract:

A laser beam emerging from its optical cavity can be made to reenter the cavity when reflected from an external object. The motion of this object will induce both amplitude and frequency modulation of the output power. The modulating signals are the interferometric components (cos and sin terms) of the optical path length of the vibrating object. Using a semiconductor laser diode, with the mirror of the external cavity as the vibrating object, a compact interferometer is developed. In this work we construct a He-Ne and a Diode laser interferometer to measure the speed of a moving mechanical object. Accuracy and limitations of both methods will be discussed.

Implementation of Optical Bistability using Non-Linear Michelson interferometer

Ehab S. Awad and A. M. El Nadi

Dept. of Laser Industrial Applications and Materials Processing,
National Institute of Laser Enhanced Sciences (N.I.L.E.S.),
Cairo University, Egypt .

Abstract

Optical Bistability devices are the basic components for optical computers and are equivalent to Flip-Flops in Electrical engineering . Many attempts have been made to implement such devices with different methods. In this paper we have implemented Optical Bistability using a modified version of Michelson interferometer which includes non-linear electro-optic feedback arrangement to allow for the hysteresis needed for bistability . The behavior of this electro-optic circuit is studied both theoretically and experimentally . Design procedures and various possible applications will be presented .

Using a Laser Diode Interferometer as a Doppler Velocimeter

Tarek A. Habashy, and Adel M. El Nadi
Laser Industrial Applications and Material Processing Dept.,
N.I.L.E.S, Cairo University.

Abstract:

A laser beam emerging from its optical cavity can be made to reenter the cavity when reflected from an external object. The motion of this object will induce both amplitude and frequency modulation of the output power. The modulating signals are the interferometric components (cos and sin terms) of the optical path length of the vibrating object. Using a semiconductor laser diode, with the mirror of the external cavity as the vibrating object, a compact interferometer is developed. In this work we construct a He-Ne and a Diode laser interferometer to measure the speed of a moving mechanical object. Accuracy and limitations of both methods will be discussed.

Implementation of Optical Bistability using Non-Linear Michelson interferometer

Ehab S. Awad and A. M. El Nadi

Dept. of Laser Industrial Applications and Materials Processing,
National Institute of Laser Enhanced Sciences (N.I.L.E.S.),
Cairo University, Egypt .

Abstract

Optical Bistability devices are the basic components for optical computers and are equivalent to Flip-Flops in Electrical engineering . Many attempts have been made to implement such devices with different methods. In this paper we have implemented Optical Bistability using a modified version of Michelson interferometer which includes non-linear electro-optic feedback arrangement to allow for the hysteresis needed for bistability . The behavior of this electro-optic circuit is studied both theoretically and experimentally . Design procedures and various possible applications will be presented .

**132 -hydroxy- bacteriopheophorbid-a methyl ester and octa- α -butyloxy-zinc
phthalocyanine as photosensitizer for future application in PDT:
Pharmacokinetic evaluation**

M. Samy Ismail, Hans-Peter Berlien

Dept. of Laser Medicine, Neukölln Hospital, Berlin, Germany

Dept. of Gyn. and Obst., Al-Azhar University, Cairo, Egypt

Dept. of Gyn. and Obst., University Hospital Benjamin Franklin, FU Berlin

Abstract

The pharmacokinetics of 132 -hydroxy-bacteriopheophorbid-a methyl ester (132 -OH-BPME) and octa- α -butyloxy-zinc phthalocyanine (8- α -bo-Zn-Pc) were studied in mice bearing *Lewis lung* carcinoma. Absorption spectroscopy was used to measure the photosensitizers concentrations. High 132 -OH-BPME and 8- α -bo-Zn-Pc uptakes were recorded in the parenchymatous organs (liver, lung), with 8- α -bo-Zn-Pc long retention. The malignant tissues accumulated 132 -OH-BPME of more than 20 folds than 8- α -bo-Zn-Pc at all incubation times. 8- α -bo-Zn-Pc concentrations in the skin and the muscle were lower than 132 -OH-BPME concentrations at any interval period, but also, the 8- α -bo-Zn-Pc retained longer until 168h. PDT with 132 -OH-BPME will be more effective than with 8- α -bo-Zn-Pc where it has more concentrations in the malignant tissues.

CO2 LASER TREATMENT OF NASAL SARCOIDOSIS

BY

Dr. Adel Malek, MD*, Dr. Farouk Safwat, MD*, Dr. Yousry Mostafa, MD**.

Abstract

Nasal Sarcoidosis in the form granulomatous mass in the anterior part of the septum of the nose was treated by CO2 laser. Zeiss microscope was used coupled with CO2 laser micro manipulator to remove this mass. The mass was examined histopathologically and proved to be Sarcoidosis. Review, clinical picture and different methods of management are discussed in this article.

* Lecturer of ENT Faculty of Medicine, Cairo University

* Prof. “ “ “ “ “” “ “”

**Lecturer of ENT National Institute of Laser Enhanced Sciences, NILES, Cairo University

Role of Conditioning Exercise Training for Patients after Transmyocardial Laser Revascularisation

By

Zeinab M. Helmy and Mostafa H. Gad**, Abd El-Ghany M. Abd El-Ghany***

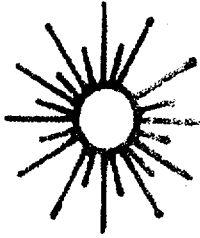
** Faculty of Physical Therapy, Cairo Univ. ** National Heart Institute.*

Background: There is evidence that exercise training can improve both cardiac performance and physical work capacity of cardiac patients. However, these potentially important changes remain to be determined in patients (pts.) after transmyocardial laser revascularisation (TMLR) particularly who is on beta-blocker.

Methods: Twenty-five pts (4 female and 21 male) with average age 56.15 ± 9.51 yr. on beta-blocker post TMLR participate in the study. All were administrated exercise tolerance test after two week of operation. Which was a ramp test on bicycle ergometer (increments 10, 15, or 20 W/min. according to Wasserman protocol) to determine total work load (TWL), maximum myocardial oxygen consumption ($MVO_2 = .14 \times SBP \times 10^{-2} - 6.3$) and to estimate oxygen uptake (VO_2). 18 pts with mean age 58.69 ± 9.6 yr. performed an exercise training program three time/week for three months at intensity equivalent to 12 – 14 Borg scales (RPE). The other seven pts (CG) were encouraged to be enrolled in physical active life as they can.

Results: The MVO_2 increased significantly ($p < .001$) in tr. group from 12.18 ± 3.21 to 14.42 ± 4.55 mlO₂/100gm of LV by $23 \pm 20\%$. The TWL and estimated VO_2 increased significantly ($P < 0.001$) by $122.26 \pm 113.69\%$ and $45.85 \pm 29.14\%$ respectively. Where TWL was 35.46 ± 14.82 W pre vs., 78.68 ± 24.30 W post, and the VO_2 uptake were 892.60 ± 166.97 vs. 1285.22 ± 263.32 ml/min. The CG did not show significant increase in MVO_2 where it was 12.18 ± 3.21 vs. 14.42 ± 4.55 mlO₂/100gm of LV (5.3%). The exercise tolerance increase significantly ($p < .05$) by $22 \pm 7.5\%$ and $8.5 \pm 3.9\%$ in TWL and VO_2 uptake respectively. The TWL was 42.55 ± 17.84 pre vs. 36.35 ± 11.12 post. While the VO_2 uptake was 882.63 ± 150.3 and 935.59 ± 157.81 -ml/min.pre and post termination of the study.

Conclusion; The exercise training for patients post TMLR results in improving exercise tolerance and cardiac performance. This was attributed to the central and peripheral conditioning effect of training which promote the oxygen transport pathway. Moreover the ischemic preconditioning during exercise may have a part in this improvement.



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

Cairo University

N.I.L.E.S

Laser Material Processing & Industrial Applications Dept.

ICS-UNIDO - NILES

***Training course on Laser Science and its Applied
Technology***

Cairo, November 9-21, 1998

Optical Engineering Lab. (2)

Laser Material Processing

Supervised by:

Prof. Dr. Adel M. El Nadi

Ehab S. Awad

Tarek A. Habashy

Waleed S. Mohamed

Laser Machining

Introduction:

In industrial applications, engineers often view Neodymium-Yag and CO₂ lasers as complementary because of their different wavelength and output characteristics. The high peak powers and short wavelength of neodymium lasers (1.064 μ) make them a better choice for drilling and cutting, particularly the many metals which are strongly reflective at the 10.6 μ of the CO₂ laser. On the other hand, the higher continuous output of CO₂ lasers and the strong absorption of some materials (titanium and nonmetals) at 10.6 μ make CO₂ the better choice for many types for continuous cutting.

Objective:

In this experiment, we are going to visit the small and large Laser Workshop. The operation of two different types of lasers used in machining will be demonstrated.

1. Nd-Yag Laser:

The neodymium laser is a member of a family generally grouped together as solid state lasers. The neodymium is the doping impurity, while YAG (Yttrium Aluminum Garnet) is the host material.

Our 800-watt continuous wave Nd-Yag laser system consists mainly of:

1. The optical assembly, where the coherent laser beam is formed. This shown in Fig.1, where 3 similar laser heads are in series to get the required output power.

Laser Head:

The laser head contains a highly polished, gold-coated reflector, with the lasing crystal Nd-Yag rod and Krypton arc lamp located at the elliptical focal points of the reflector. Water jackets are provided around the lamp and rod to give maximum cooling water flow.

Spatial Filter:

In many applications, oscillation in the TEM₀₀ mode is desired. This can be achieved by placing a mode limiting aperture within the lasing cavity which induces enough loss in the large diameter, higher order transverse modes so that only TEM₀₀ mode will oscillate.

Delivery System:

A He-Ne laser is used for 2 reasons. First, for aligning the laser mirrors. Second, as a visible (633nm) reference beam on the object to be machined. A convex lens, mounted on a controlled movable arm (Z-axis) is used to focus the laser beam on the object. The object is mounted on the computer controlled CNC moving X-Y table (Fig.2).

2. The power station unit, which contains controls for operating the laser system and provides power and cooling to the laser head.

Power Station:

The power station assembly contains the lamp power supply and cooling system.

Cooling System:

The cooling system utilizes a water-to-water heat exchanger for cooling. Deionized water is used in the primary cooling circuit to cool the laser head. Standard city water is used in the secondary circuit to cool the deionized water. A deionization and particle filter is used in the primary circuit to prevent contaminants and possible damage of components in the laser head. The cooling system is shown in Fig.3.

3. The Computer unit, through which a programmed pattern can be fed to the moving X-Y table, on which the object is fixed.

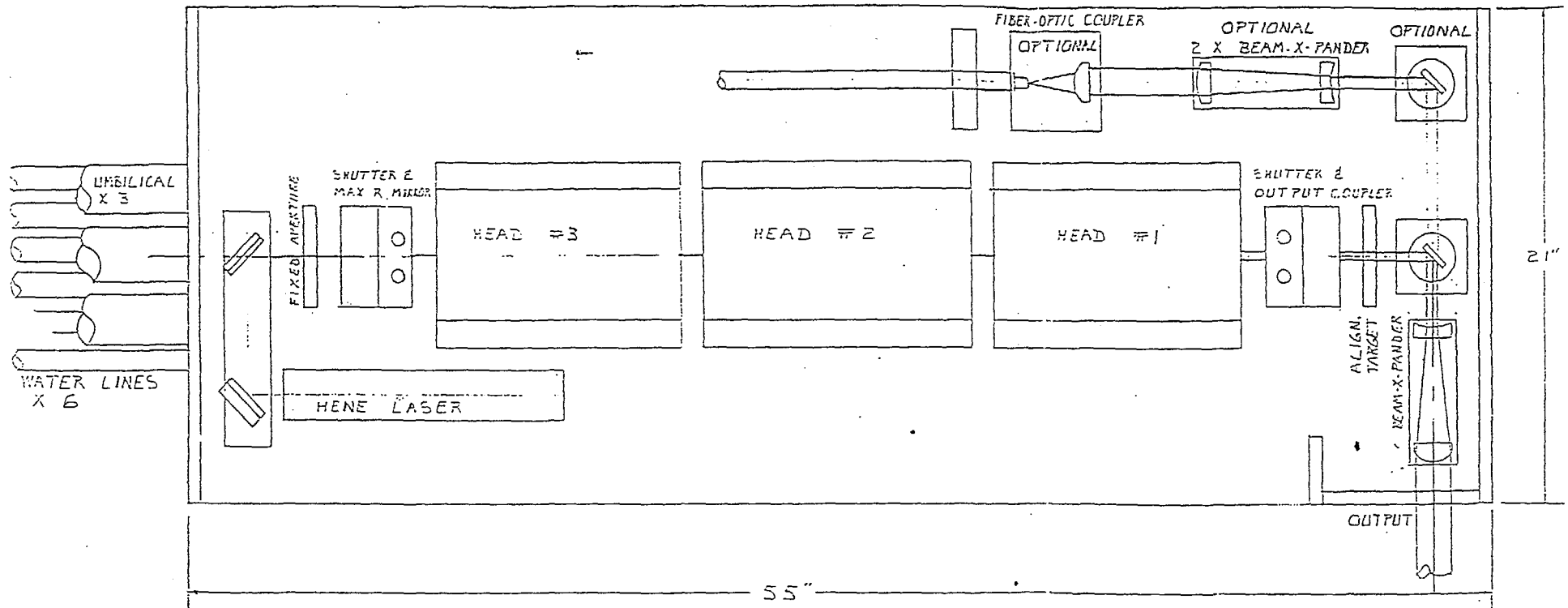


Fig.1: Optical assembly of the 800w CW Nd-Yag Laser.

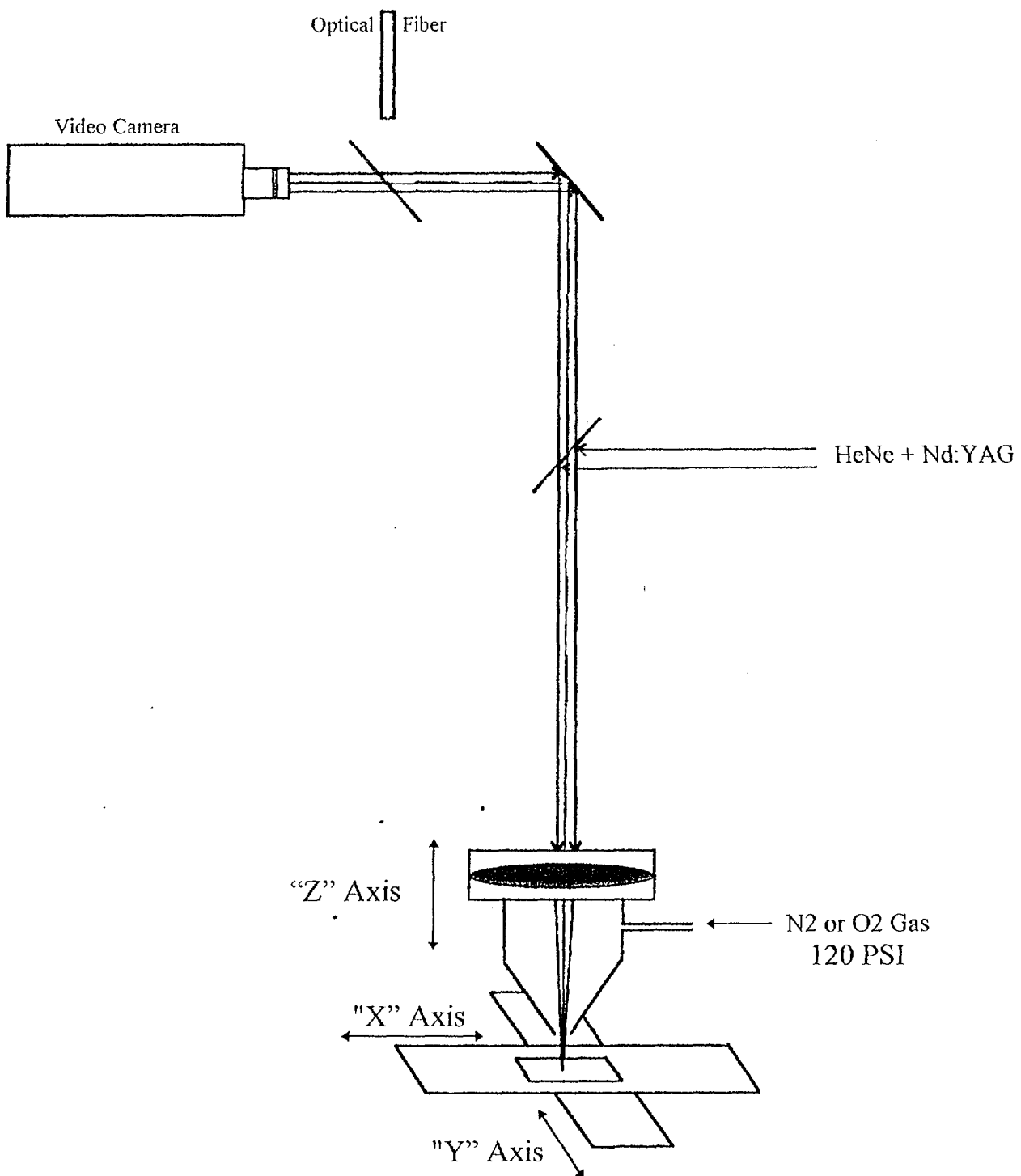


Fig.2: Delivery system for the 800w CW Nd-Yag Laser.

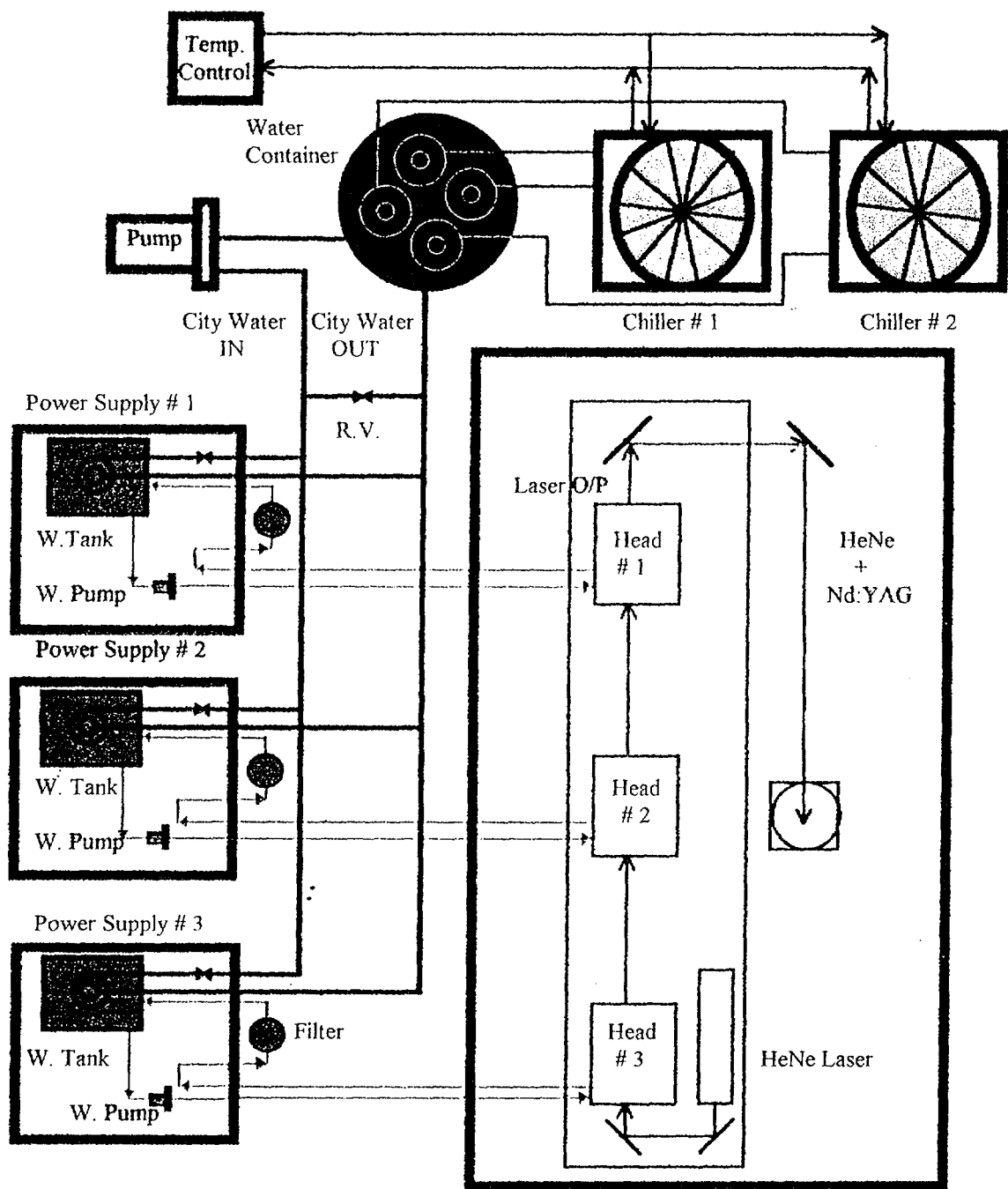


Fig.3: Water Circulation Block Diagram for the Nd-Yag Laser system.

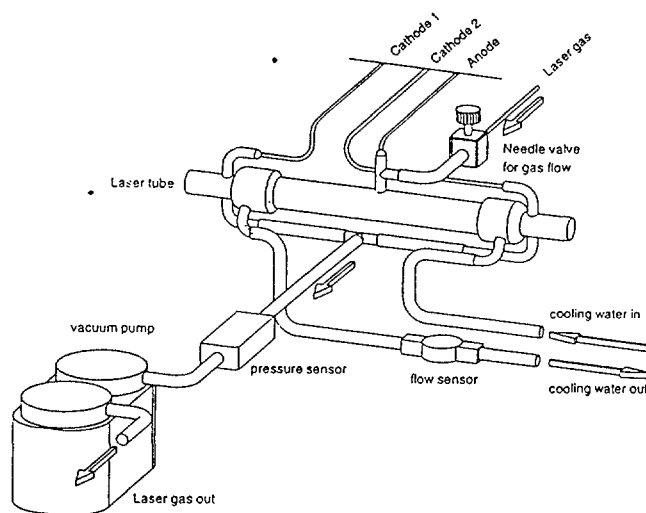
2. CO₂ Laser and material processing

Introduction:

Material processing involves performing some manipulations on materials in order to make them suitable for other applications. CO₂ lasers are very important tools in these operations. The CO₂ laser has a wavelength of 10.6 micrometer which falls in the infrared region, and the laser beam is coherent so it can be focused down to a few wavelengths. Consequently, the CO₂ laser makes it possible to concentrate a high power radiation onto the exact point of particular components. Besides, it is cheap and has a relatively high efficiency in conversion of electrical energy into optical energy, approx. 10 to 30 %.

CO₂ laser specifications and system overview :

Wavelength	10.6 micro meter
Max. power	10 Watt
Class	III
Gas mixture	CO ₂ , He , N ₂
Pressure inside cavity	30 – 50 mbar
Current	5 – 50 mA
Focus of nozzle	2.5 cm
Control of laser processing	Computerized



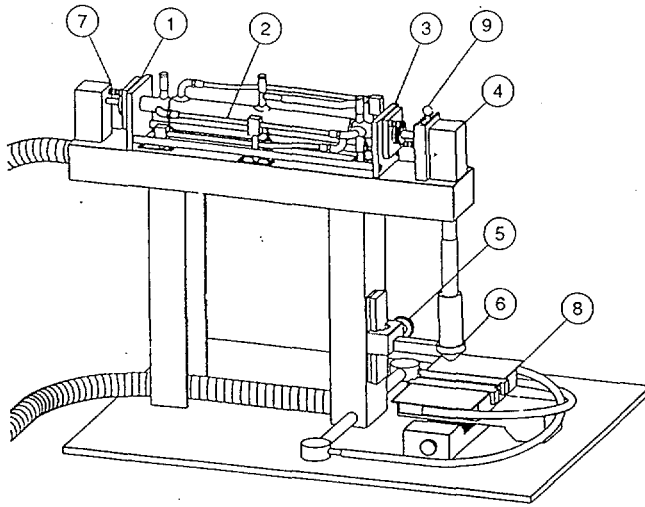
“System overview” *

The laser workstation has a translation stage that moves in X and Y directions and can be controlled by a computer software.

The structure of the laser head and processing unit are shown in the next figure:

Laser head and processing section

The slow flow Laser tube (2) is closed by two mirrors. The back mirror (1) is made from Zinc Selenide and has a radius of curvature of 2000 mm. The output coupler (3) is also made from Zinc Selenide with a transmission of 15 %. The Laser beam is guided by means of an adjustable beam bender (4) into the nozzle (6). Inside the nozzle a lens made from Zinc Selenide with a focal length of 25 mm focuses the beam down to some 10 μm . In addition the nozzle contains flow channels for assisting or inertia gases to optimise the particular processing. The gear and pinion drive (5) allows the adjustment of the nozzle with respect to the work piece which can be fixed by magnets or other means onto the XY stage (8). The stages are driven by stepper motors which are controlled by an external personal computer. A suction pump is connected to the stages for removal of generated exhausts during the processing. A diode laser (7) is used to align the laser resonator. In addition it serves as pointing device to show the spot on the working piece, where the main laser beam will hit the surface of it. A shutter (4) allows the immediate shut down of the laser radiation.

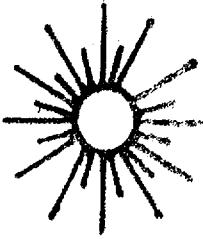


Laser head with processing area *

Experiments :

- Operation of the CO₂ laser.
- Marking names and figures on materials.
- Cutting of materials.

* Reference "W. Luhs and Schubert, MEOS".



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

Cairo University

N.I.L.E.S

Laser Material Processing & Industrial Applications Dept.

ICS-UNIDO - NILES

***Training course on Laser Science and its Applied
Technology***

Cairo, November 9-21, 1998

Optical Engineering Lab.(3)

Laser and Optical Systems (1)

Supervised by:

Prof. Dr. Adel M. El Nadi

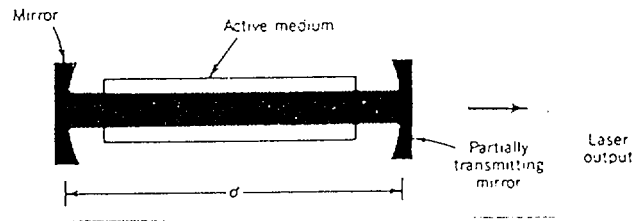
Ehab S. Awad

Tarek A. Habashy

Waleed S. Mohamed

1. Nd :YAG Diode Pumped Laser Experiments

Introduction :



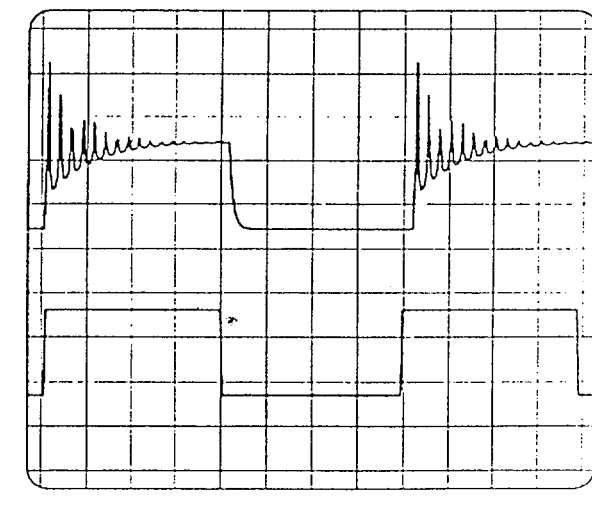
“Laser cavity with a gain medium”

When the pump supply energy to the active medium, electrons moves from lower energy state to higher energy state . after some time the higher energy state becomes more populated than the lower one hence we say “population inversion” occurs. As the inversion continue the gain of the medium increases until it becomes greater than or equal to the loss of the cavity ,hence lasing action starts . Laser results from stimulated photons that results when another photon force an excited electron to move from high energy state to low energy state producing another photon having the same direction, phase, and frequency . as time pass photon density increases inside the cavity resulting in more stimulated emission and hence more and more photons until we reach a steady state and we get the full laser power from output mirror . Hence, Lasing condition is : Gain must be greater or equal to loss .

And the pumping power required to achieve that condition is called “Threshold power”

1.1. Lasing Action & transient behavior :

Objective : Observing the laser cavity output as the pumping energy increases gradually to the threshold value . Demonstration of the spiking behavior of the output laser power until it reaches steady state value, with explanation of such behavior .



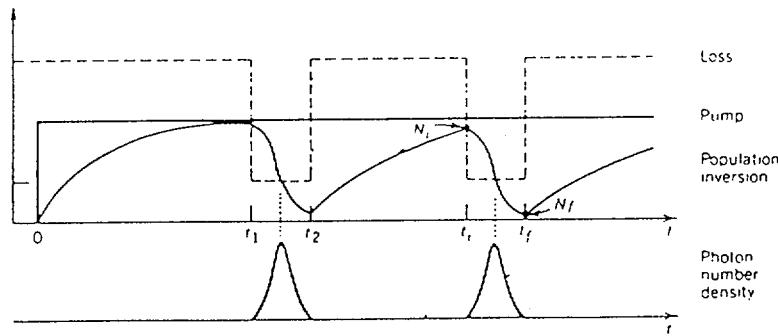
“Spiking of the Nd : YAG laser”

- procedures :
- 1- modulation of the input power on & off using a square wave signal .
 - 2- Then detecting output power of the laser to see the spiking behavior, as shown in the above figure .

Q- Switching :

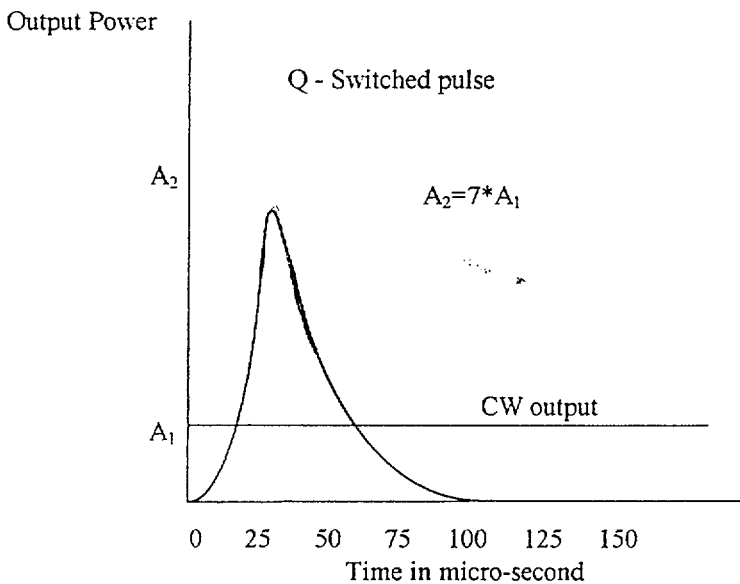
Objective : Obtaining pulsed Nd:YAG laser using mechanical Q- Switching technique .

Explanation : As the chopper is rotating the Loss of the cavity is switched on and off . While the Loss of the cavity is higher than the gain of active medium the pumping process store more energy inside the medium by exciting more electrons to the higher energy state . And as the Loss is switched Lower than the gain, lasing action starts and this large number of inverted electrons transferred into photons resulting in a high peak output pulse that exceed the normal CW power of laser .



“Q - Switching”

- procedures :
- 1- A mechanical chopper with narrow slit is inserted inside laser cavity .
 - 2 - while rotating chopper using motor , the output pulsed power is detected and its peak value and duration are measured .



Second Harmonic Generation (SHG) :

Objective : Demonstration of second harmonic generation by converting infrared Nd : YAG radiation (1064 nm) into a green light beam (532 nm) using a KTP crystal.

Explanation : In non - linear crystals such as KTP , the dielectric polarization is a non - linear function of the incident Electric field (as shown in the figure below) . hence , when a strong electric field passes through the second harmonic crystal the resulting electric polarization will be a nonlinear function of the incident field . And we get the second harmonic frequency .

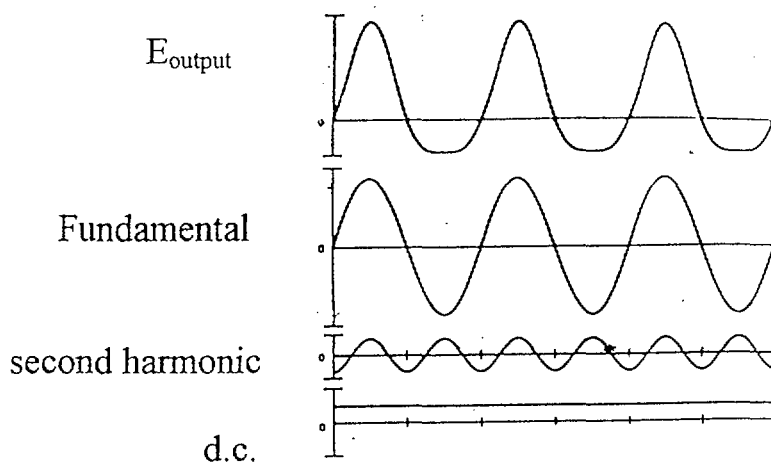
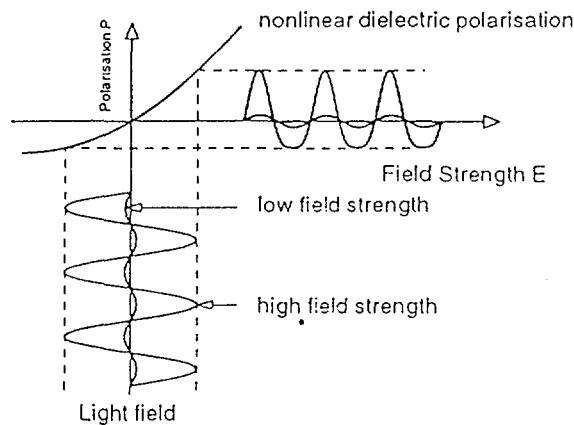
For a small incident field :

$$P = \chi_L * E$$

For a large incident field :

$$P = \chi_L * E + \chi_{NL} * E^2$$

Where "E" is the electric field intensity .



“ Nonlinear characteristic of crystal and frequency components of its output”

Note that the phase matching condition must be satisfied , $K_{\text{output}} = K_1 + K_2$. And the efficiency of the harmonic generation process is very sensitive to the material dispersion of the crystal ($n(2\omega) - n(\omega)$) . Birefringent crystal can be used for efficient generation .

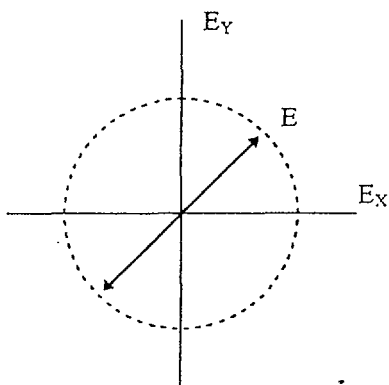
- Procedures :
1. Viewing infrared laser of Nd : YAG using an infrared viewer .
 2. KTP crystal is inserted inside Nd: YAG laser resonator .
 3. viewing generated green laser .

2. Polarization & birefringence Experiments

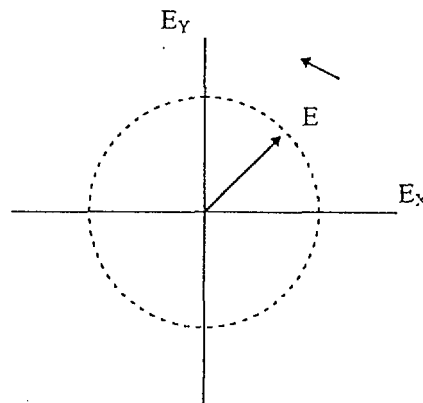
objective : Definition of polarization, expression of Malus law, and Demonstration of Birefringence in crystals .

Definition : The path that a traveling Electric field vector trace with time while viewing it from a fixed position is called " Field Polarization "

The most important two types of polarization are : Linear polarization and Circular polarization

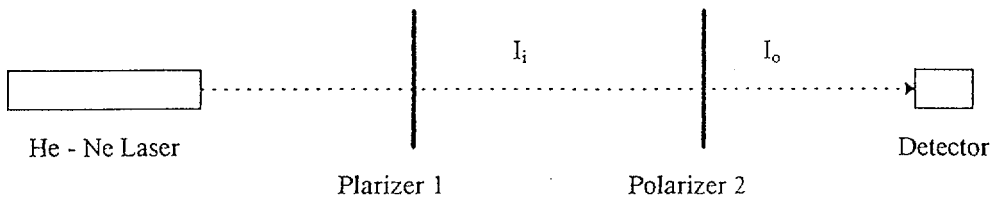


Linear polarized
 $E_y/E_x = \Phi$
 phase difference $= m\pi$,
 $m = 0, 1, 2, \dots$



Circular Polarized
 $E_x = E_y$
 Phase difference $= (m+1)\pi/2$,
 $m = 0, 1, 2, \dots$

A. Malus Law :



- Procedures :
- Arrange the setup as shown above .
 - Rotate the second polarizer while keeping the first one fixed .
 - detect the output intensity from second polarizer.

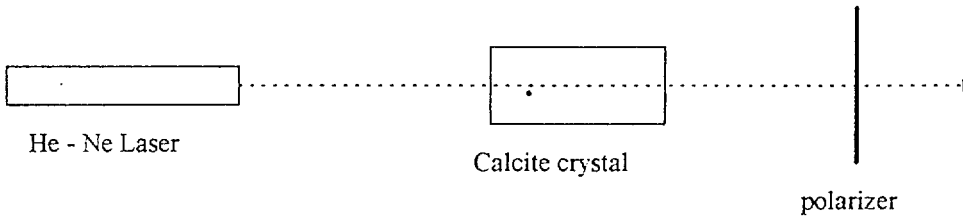
The following Law will be satisfied :

$$I_o = I_i * \text{Cos}^2\phi$$

where "φ" is the angle between the transmission axes of the two polarizers .

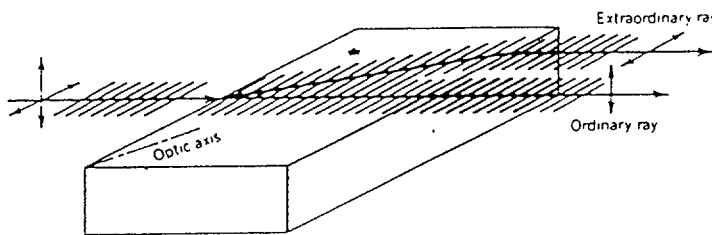
B. Birefringence :

Definition : Some crystals have two refractive indices one is called Ordinary (n_o) and the other is called Extra-ordinary (n_e) , when the laser pass through these material it suffers from the two refractive indices simultaneously . Hence it splits into two rays every ray will have a different velocity and will take a different path through the crystal .



- Procedures :
- Arrange the above optical setup
 - Observe the different two paths of laser coming out of crystal
 - Rotate the polarizer in front of the crystal , and study the effect on the two beams .

The two paths through the crystal should be as follows :

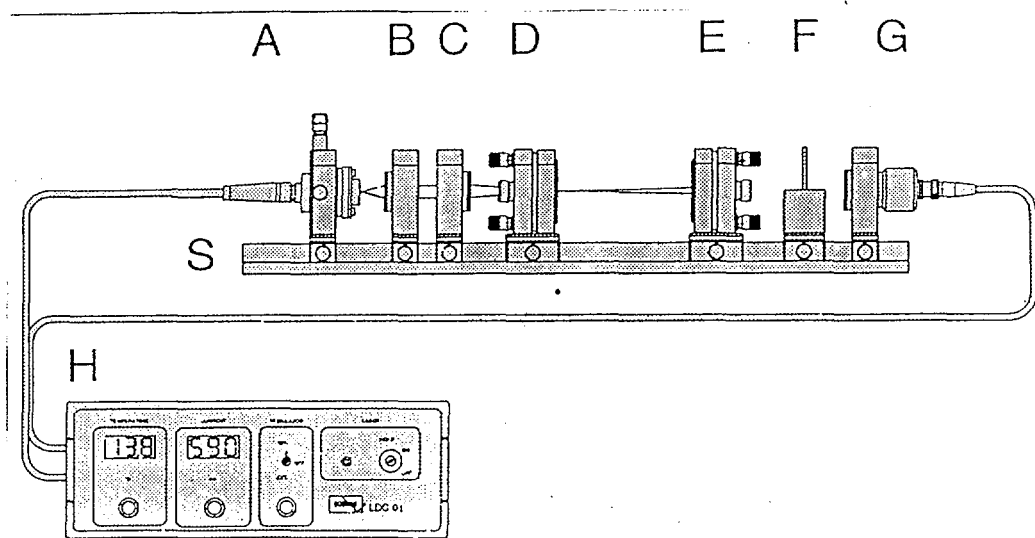


Laser Sources

- Helium-Neon (He-Ne)Lasers :

	Wavelength(nm)	Output Power (mW)	Class	Polarization
uniphase (Red)	633	3	IIIa	Polarized - Linear
Newport (Red)	633	5	IIIb	Polarized - linear
Newport (Green)	543	3	IIIa	Non Polarized

- Diode Pumped Nd-YAG Laser :



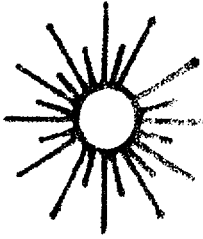
Diode pumped Nd-YAG laser modules : A) Diode laser for pumping . B) & C) Focusing modules . D) Rear mirror and Nd:YAG rod . E) Output mirror . F) Filter for output wavelength . G) Detector . H) Diode laser driver . S) Optical rail .

- Laser diode :

Max. power : 450 mW
 Class : IIIb
 Wavelength : 810 nm
 Laser Threshold : 350 mA
 Current control : 0 - 800 mA

- Nd- Yag :

Wavelength: 1064 nm (infrared), 532nm (Second Harmonic)
 output power : 10 - 50 mW
 Threshold : 450 mA .



NATIONAL INSTITUTE OF LASER ENHANCED SCIENCES

N . I . L . E . S



جامعة القاهرة

Cairo University

N.I.L.E.S

Laser Material Processing & Industrial Applications Dept.

ICS-UNIDO - NILES

***Training course on Laser Science and its Applied
Technology***

Cairo, November 9-21, 1998

Optical Engineering Lab. (4)

Laser and Optical Systems (2)

Supervised by:

Prof. Dr. Adel M. El Nadi

Ehab S. Awad

Tarek A. Habashy

Waleed S. Mohamed

1.LASER DOPPLER VELOCIMETER

Introduction:

The technique of using the Doppler shift of laser light to determine velocity of a moving object, was first demonstrated in 1964 by Yeh and Cummins [1], who observed the shift of light scattered from particles carried in water flow. This is of course exactly the same principle used in Radar in a much lower-frequency part of the electromagnetic spectrum.

The ability to make non-contact velocity measurements has grown in importance over the past few years and is now routinely applied to probe the velocity and acceleration characteristics of many items from platelets in the blood to jet engine blades.

Objective:

In this experiment, we will illustrate the fundamentals of Laser Doppler Velocimetry. Both Michelson and Mach-Zehnder interferometer will be used to demonstrate this concept by measuring the speed of moving objects.

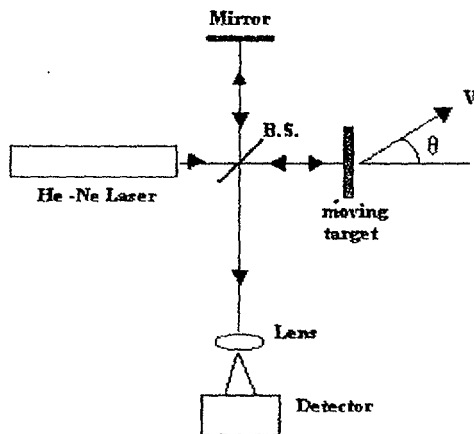


Fig 1: Experimental setup for demonstrating Michelson Interferometer as a Velocimeter.

Related Theory:

Doppler effect:

The Doppler effect is a way to relate the nature of waves and their interaction with moving objects. If a wave (laser light) of fixed wavelength λ , and speed c , hits a moving surface, the apparent frequency at the moving surface follows:

$$f = f_0 - f \quad (1)$$

$$\Delta f = \frac{2v}{\lambda} (\cos\theta_1 - \cos\theta_2) \quad (2)$$

Where: f_0 is the laser frequency ($=c/\lambda$)

v is the velocity of the moving object

λ is the wavelength of light

θ_1 is the angle between the velocity vector and the incident light beam

θ_2 is the angle between the velocity vector and the reflected light beam

For particles approaching the laser source, the frequency of the reflected wave will be upshifted whereas for receding objects the reflected wave's frequency will be downshifted.

Interferometry:

Interferometry is a method of detecting small changes in distances through the interference of two coherent waves and observing the resulting interference fringes. In Michelson interferometer (Fig. 1), the laser beam is divided, by a 50-50 beam splitter, into two beams. One of them is a reference beam, which is not modulated. The other beam hits the moving target, which we want to measure its velocity. The light is conveyed to this object, reflected back, and is, then, mixed by the reference beam.

As the object moves toward or away from a given point, the phase of the reflected light beam relative to the reference beam changes. The interferometer converts this phase shift into an amplitude modulation which is readily detected. The phase change is given by:

$$\phi = 2kx = \frac{4\pi}{\lambda} x \quad (3)$$

Where: x is the displacement

The time rate of the phase shift is thus given by:

$$\frac{d\phi}{dt} = \frac{4\pi}{\lambda} \frac{dx}{dt} = \frac{4\pi}{\lambda} v = 2\pi \Delta f \quad (4)$$

Thus, by counting the fringes per unit time, the velocity can be determined precisely using equation (4), since each fringe shift is equivalent to 2π phase change.

For rotational velocity, the same concept can be used, however the velocity will be given by:

$$v = \Omega r \quad (5)$$

Where: Ω is the angular velocity of the object (rad/sec)
 r is the radius of the rotating object

Experimental Setup:

1. Construct the setup shown in Fig. 1.
2. Align the setup until clear fringes are observed.
3. Apply an ac signal to the PZT (moving object).
4. Observe the shift in interference fringe with the motion of the object.
5. Connect the photodetector to the Oscilloscope and measure the number of fringes shift per unit time.
6. Repeat the steps from 1 to 5 using Mach-Zhender Interferometer as shown in Fig.2.

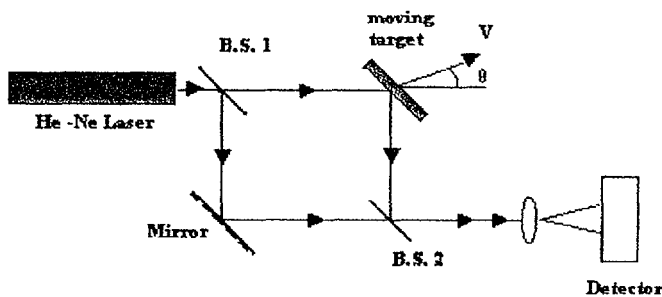


Fig.2: Mach-Zhender setup.

2. EXPERIMENTS ON FOURIER OPTICS

1-INTRODUCTION

This experiments demonstrate the Fourier analysis of a coherent optical wave at the focal plane of a lens and the mechanism by which the images is formed. The power of spatial filtering techniques for manipulating optical images is illustrated.

2- THEORETICAL BACKGROUND

One of the useful properties of a converging lens is its inherent ability to produce two-dimensional Fourier transforms. This complicated analog operation is performed with extreme simplicity in a coherent optical system, taking advantage of the basic laws of propagation and diffraction of light. The phase transformation function of the lens can be written as

$$t(x, y) = \text{Exp}[-i(k/2f)(x^2 + y^2)], \quad (1)$$

where f is the focal length of the lens and k is the wave number ($k=2\pi/\lambda$).

For an incident field having a distribution $U(x,y)$, the amplitude distribution behind the lens becomes

$$U'(x,y) = U(x,y) \text{Exp}[-i(k/2f)(x^2 + y^2)]. \quad (2)$$

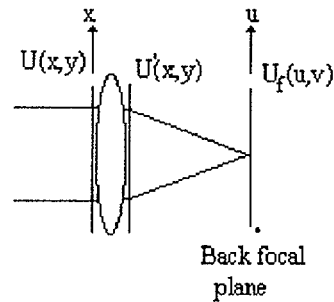


Fig.1 Geometries for performing the Fourier transform operation with a convex lens.

To find the distribution $U_f(u,v)$ in the back focal plane of the lens, the Fresnel diffraction approximation is applied.

$$U_f(u,v) = \text{Exp}[i(k/2f)(u^2 + v^2)]/(i\lambda f) \quad (3)$$

$$\int_{-\infty}^{\infty} \int_{-\infty}^{\infty} U(x, y) \text{Exp}[-(i k/2f)(x^2 + y^2)] \text{Exp}[i(k/2d)(x^2 + y^2)] \text{Exp}[-i(2\pi/\lambda d)(xu+yv)] dx dy$$

The first two quadratic phase terms inside the integration will cancel each other (note that $d = f$) and equation (3) can be simplified to

$$U_f(u,v) = \text{Exp}[i k/2f (u^2 + v^2)]/(i\lambda f) \quad (4)$$

$$\int_{-\infty}^{\infty} \int_{-\infty}^{\infty} U(x, y) \text{Exp}[-i 2\pi/\lambda f (xu+yv)] dx dy.$$

The field distribution $U_f(u,v)$ is proportional to the two-dimensional Fourier transform of the incident field. The quadratic phase term in equation (4) can be removed if the input transparency is put in the front focal plane of the lens.

3-EXPERIMENTAL SETUP

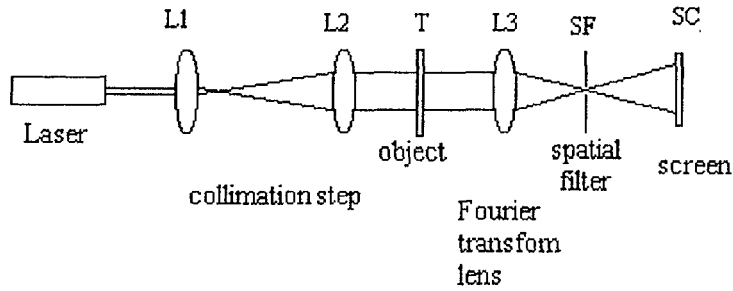


Fig.2 Experimental setup.

- The lenses L1 and L2 are fixed such as the distance between them equals $f_1 + f_2$, where f_1 and f_2 are the focal lengths of L1 and L2 respectively.
- The object T is placed in the front focal plane of the lens L3 or, in other words, at a distance f_3 in front of L3.
- The spatial filter SF is placed in the back focal plane of L3, where the Fourier transform of T is constructed.
- The screen SC is placed at a distance greater than or equals to f_3 behind the SF, so that the reconstructed image of T after filtering can be viewed.

4- ABBE'S THEORY OF IMAGING

- The object T in this experiment is a fine wire mesh as shown in figure 4.a.
- The Fourier transform of T is constructed at the back focal plane of L3 (figure 4.b).
- The SF in this case is a narrow slit.
- If the slit is horizontal such that it passes only a single row of spectral components, the corresponding image reconstructed at SC will contain only the vertical structure of the mesh, figure 5.a.
- If the slit is vertical such that it passes only a single column of spectral components, the corresponding image reconstructed at SC will contain only the horizontal structure of the mesh, figure 5.b.

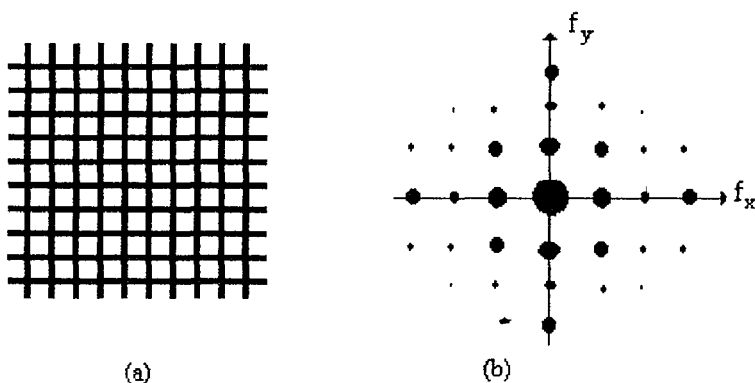


Fig.4 (a) Object T (b) two-dimensional Fourier transform of T.

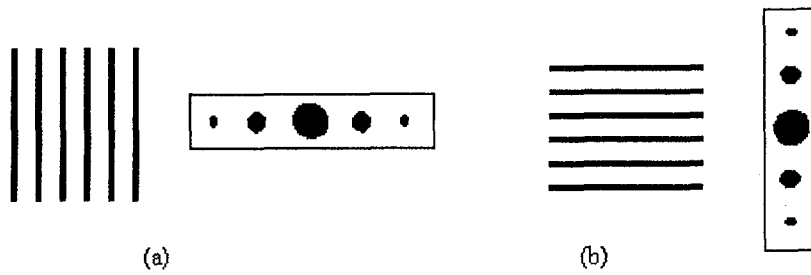


Fig.5 Reconstructed image from (a) horizontal slit (b)vertical slit.

6- OPTICAL IMAGE PROCESSING

-The target T in this case is two separate images that had been double exposed onto the same film, as shown in figure 6.a.

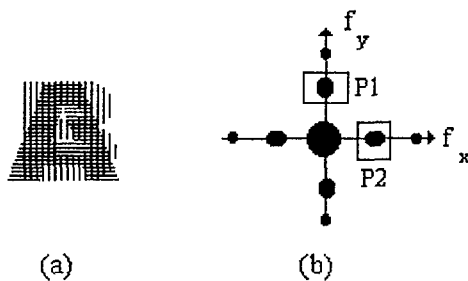


Fig.6 (a) the target T (b) Fourier transform of T.

-Fourier transform of T is shown approximately in figure 6.b.

-In this case, spatial filter is a slit that passes either the spectral components P1 or P2.

-If SF passes the spectral component P1, the corresponding image reconstructed at SC is letter A only, as shown in figure 7.a.

-If SF passes the spectral component P2, the corresponding image reconstructed at SC is letter B only, as shown in figure 7.b.

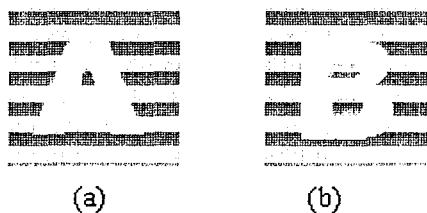


Fig.7 Reconstructed images corresponding to filters passes spectral components (a) P1 (b) P2.

7- REFERENCES

- Joseph W. Goodman, "Introduction to Fourier Optics", second edition, New York: McGraw Hill, 1996.
- Bahaa E. A. Saleh and Malvin Carl Teich, "Fundamentals of photonics", John Wiley & sons inc., 1992.

CARS applied to dielectric barrier and microwave discharges for NO removal

J. Uhlenbusch
Institute for Laser- und Plasmaphysics,
Heinrich-Heine-University Düsseldorf

Content

I. Introduction

- Role of NO in environmental pollution
- catalytic removal versus plasma removal by dielectric discharge or microwave discharge
- examples of NO reduction plasma experiments

II. Properties of dielectric barrier discharges, their diagnostics and modeling

- Streamers and discharge parameters
- chemical processes
- modelling
- measurements of T_{vib} , T_{rot} and molecular densities by coherent anti-Stokes Raman scattering (CARS)
- measurement of NO concentration and gas purification

III. cw and pulsed microwave discharges and their diagnostics

- objectives
- calculation of microwave electric fields in the discharge volume
- T_{vib} , T_{rot} , and concentrations of N_2 and NO in a cw discharge
- T_{vib} , T_{rot} , and concentrations of N_2 and NO in a pulsed discharge

IV. Summary and Conclusion

I. Introduction

1. Detrimental influence of nitric oxides

- nitric oxides are gaseous toxic agents
- these oxides are mainly produced in technical combustion processes
- in free atmosphere NO is oxidized to NO₂
- NO₂ forms nitric acid in a humid environment
- by exposure to sunlight nitric oxides react with gaseous volatile organic compounds and form summer smog.

2. Source of NO_x and legislative requirements

- road traffic is responsible for about 50 % of dangerous emissions
- the actual EURO-legislation claims emission of 1 g (NO_x + HC)/km
- modern engines with low consumption (direct injecting Diesel and Otto-cycle engines) are leanly operated and their exhaust contains oxygen
- common catalytic reduction of NO requires stoichiometric mixtures and does not reach the forthcoming EURO-legislation in 2004 (0.08 g NO_x/km for Otto cycle engines and 0.3 g (NO_x + HC)/km for Diesel engines)
- therefore, novel postcombustion removal techniques at low temperatures under presence of oxygen have to be developed

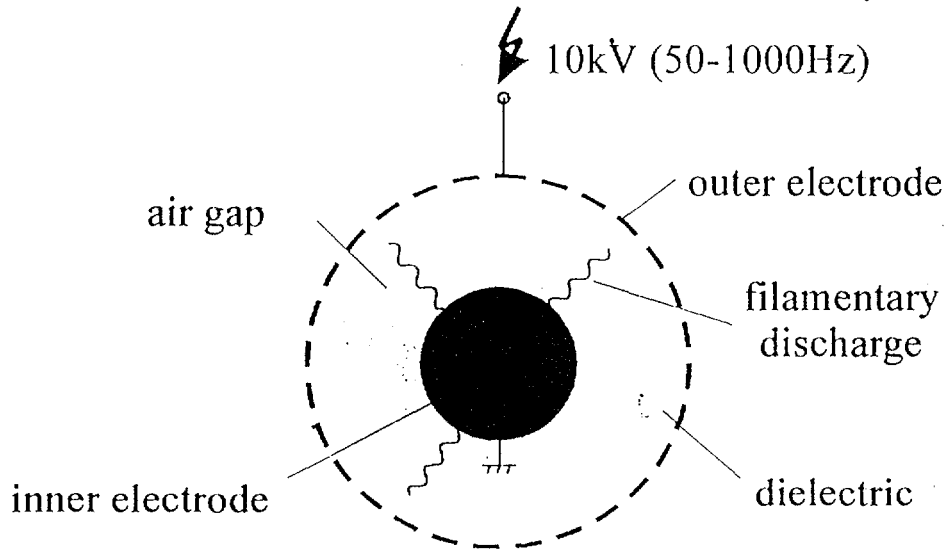
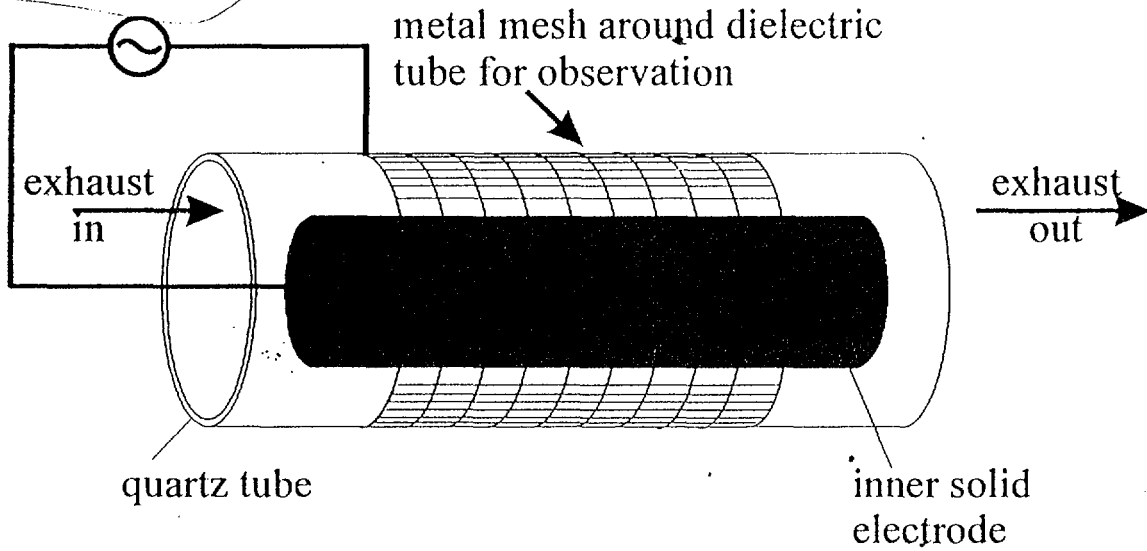
3. Cleaning of exhaust gases by non-catalytic techniques

- electron beam techniques provide 100 % desoxygenation and 80 % denoxification in powerplants by deposition of 10 kJ/kg energy from a 300 kV electron beam
- dielectric barrier discharges pulsed, corona discharges, dielectric pellet bed reactors and microwave discharges are candidates for NO_x removal in mobile systems
- But: only 25-30eV/per NO molecule are conceded

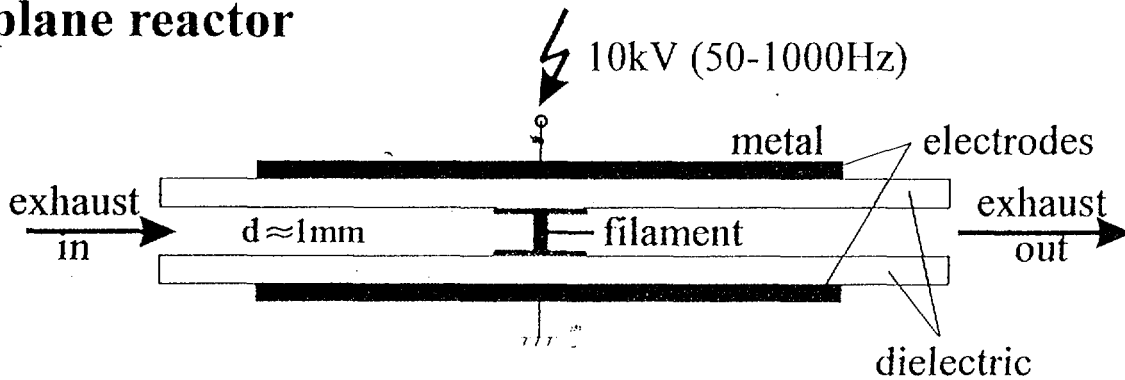
Different types of pulsed non-thermal discharges for chemical reduction of nitric oxide

Two types of dielectric barrier discharges

A) coaxial reactor

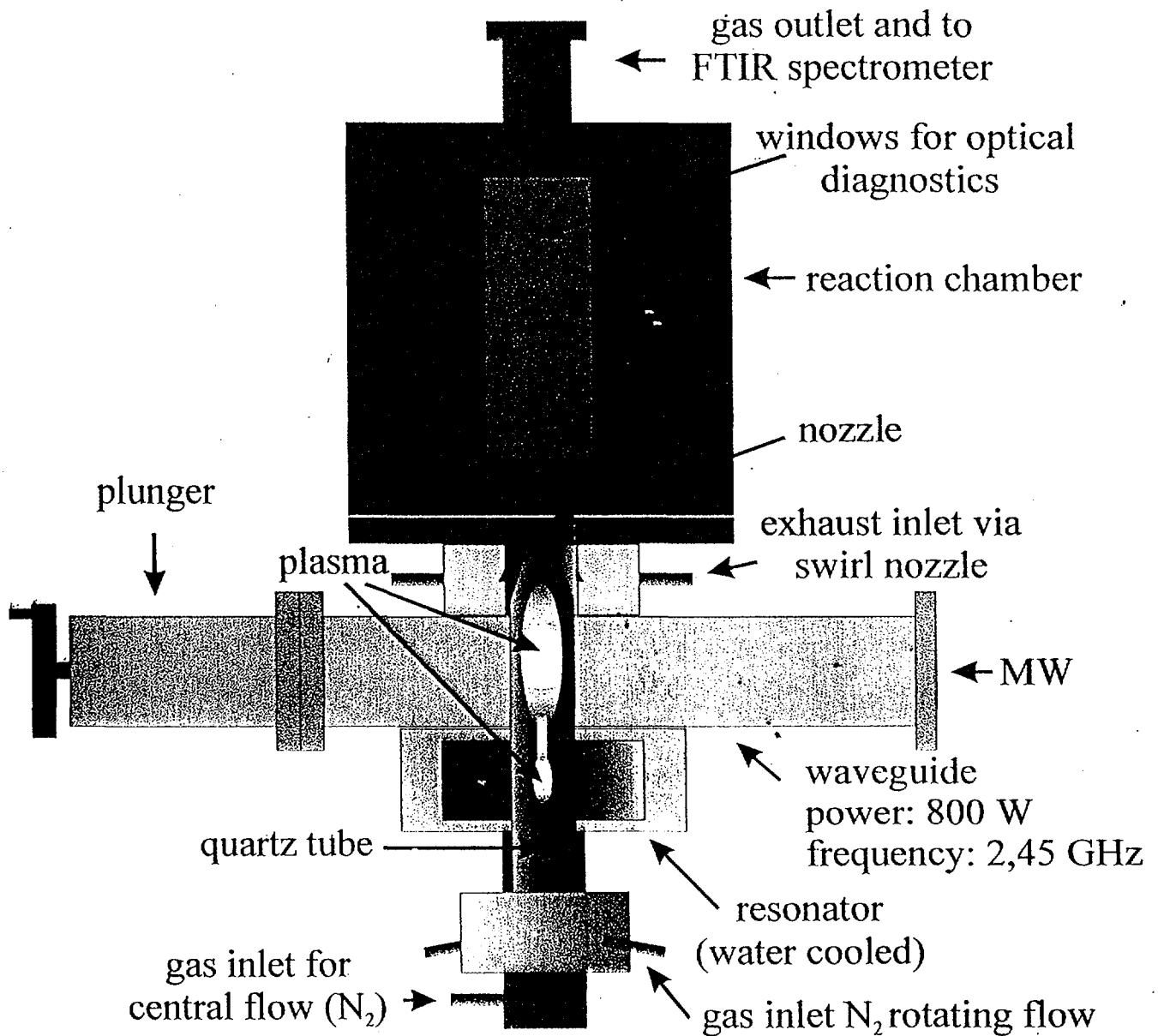


B) plane reactor

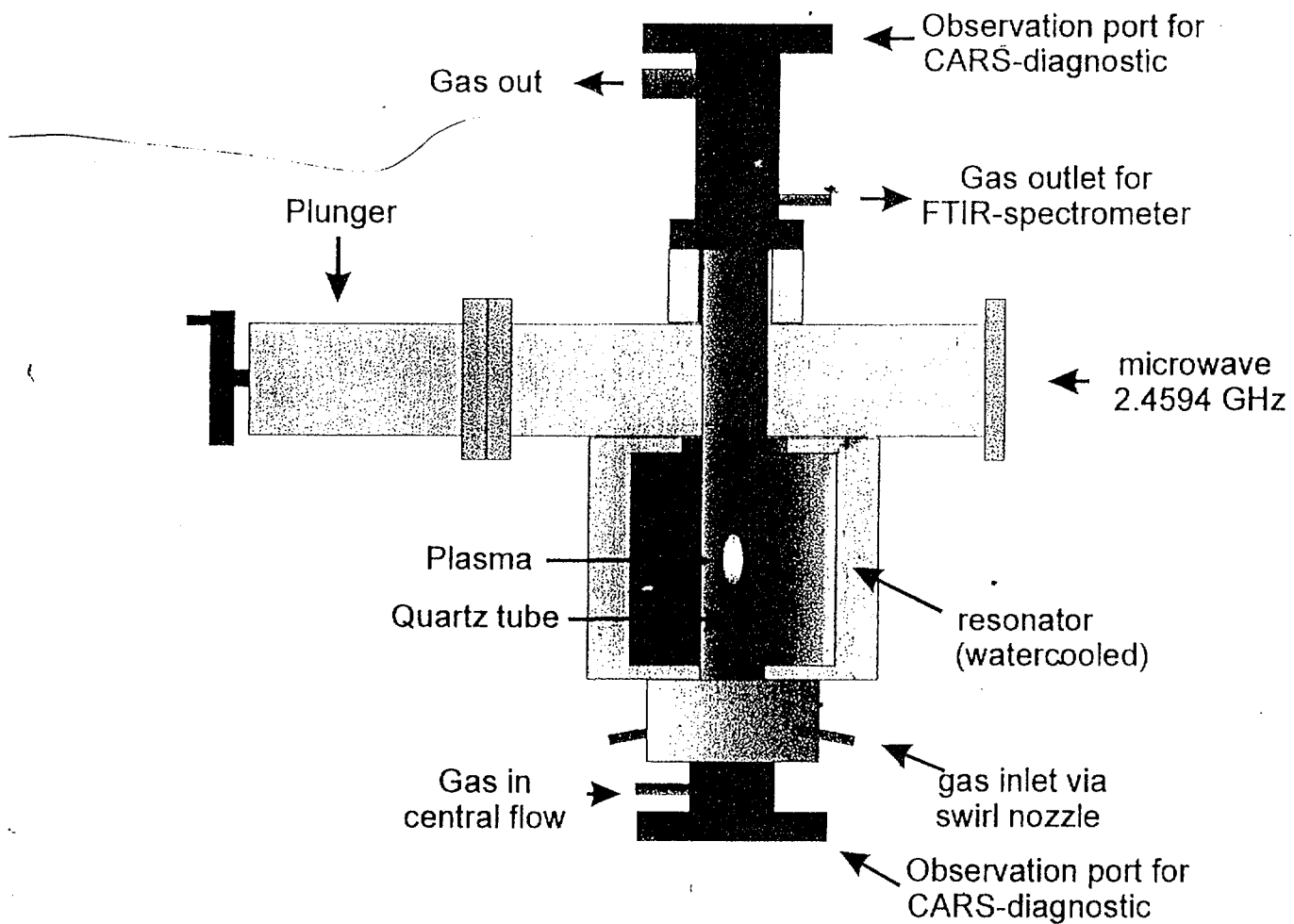


▽ Knife

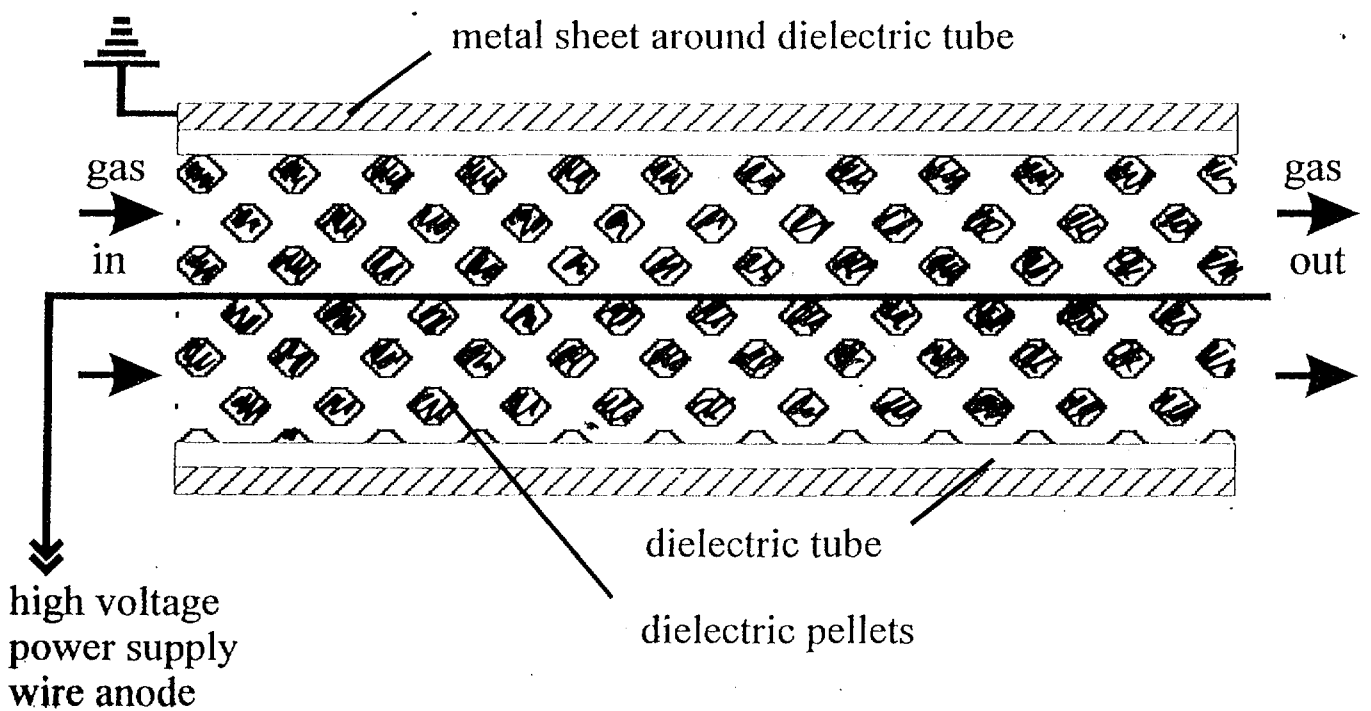
C) cw microwave discharge



D) pulsed microwave discharge



E) dielectric pellet bed



II. Properties of dielectric barrier discharges (DBD)

- characteristic parameter during discharge phase of DBD (20ns)
 - between the electrodes air gap (1mm) and dielectric (2mm) as barrier
 - electric field strength $5 \cdot 10^4 \frac{\text{V}}{\text{cm}}$
 - reduced field strength $\frac{E}{n} = 10^{-15} - 5 \cdot 10^{-15} \text{ Vcm}^2$
 - current density 10^3 A/cm^2 , transmitted charge 1 nC
 - life time of discharge $10 \text{ ns} - 20 \text{ ns}$
 - current per streamer $1-10 \text{ amps}$
 - average number of streamers $10/\text{cm}^2$
 - streamer diameter typically 0.2 mm
 - electron temperature 10 eV
 - electron density $10^{13} - 10^{14} \text{ cm}^{-3}$
 - surface charge 10 nC/cm^2 compensates externally applied field after $10-20 \text{ ns}$ and the discharge extinguishes

- plasmachemical reactive phase of DBD (1ms)
 - production of primary radicals N_2^* , N , N^*O , O^* during the discharge phase
 - production of secondary radicals H , OH , HO_2
 - temperature of radicals $300 - 400 \text{ K}$
 - reactive volume spreads over an extended area of 2 mm diameter
 - two major reaction channels: (a) reductive path $\rightarrow \text{N}_2, \text{O}_2$
 (b) oxidation $\rightarrow \text{NO}_2, \text{HNO}_3$ (unwanted)

II. Properties of dielectric barrier discharges (DBD)

Processes accounted in the model

	Process			Process
1	$e + N_2 \rightarrow e + N_2(A)$	$f(E/N)$	19	$O + NO + N_2 \rightarrow NO_2 + N_2$
2	$e + N_2 \rightarrow e + N + N$	$f(E/N)$	20	$O + NO + O_2 \rightarrow NO_2 + O_2$
3	$e + O_2 \rightarrow e + O_2(a)$	$f(E/N)$	21	$O + NO + NO \rightarrow NO_2 + NO$
4	$e + O_2 \rightarrow e + O + O$	$f(E/N)$	22	$O + NO + NO_2 \rightarrow NO_2 + NO_2$
5	$N + O_2 \rightarrow NO + O$		23	$O + NO + N_2O \rightarrow NO_2 + N_2O$
6	$N + O_3 \rightarrow NO + O_2$		24	$N_2(A) + O_2 \rightarrow N_2 + O + O$
7	$N + NO \rightarrow N_2 + O$		25	$N_2(A) + O_2 \rightarrow N_2O + O$
8	$N + NO_2 \rightarrow N_2 + O_2$		26	$N_2(A) + N_2O \rightarrow N_2 + N + NO$
9	$N + NO_2 \rightarrow N_2 + O + O$		27	$N_2(A) + N_2 \rightarrow N_2 + N_2$
10	$N + NO_2 \rightarrow N_2O + O$		28	$N_2(A) + O_2 \rightarrow N_2 + O_2(a)$
11	$N + NO_2 \rightarrow NO + NO$		29	$N_2(A) + NO \rightarrow N_2 + NO$
12	$O + NO_2 \rightarrow NO + O_2$		30	$O_2(a) + O_3 \rightarrow O_2 + O_2 + O$
13	$O + O_3 \rightarrow O_2 + O_2$		31	$O_2(a) + N \rightarrow NO + O$
14	$NO + O_3 \rightarrow O_2 + NO_2$		32	$O_2(a) + N_2 \rightarrow O_2 + N_2$
15	$N + O + N_2 \rightarrow NO + N_2$		33	$O_2(a) + O_2 \rightarrow O_2 + O_2$
16	$N + O + O_2 \rightarrow NO + O_2$		34	$O_2(a) + O \rightarrow O_2 + O$
17	$O + O_2 + N_2 \rightarrow O_3 + N_2$		35	$O_2(a) + NO \rightarrow O_2 + NO$
18	$O + O_2 + O_2 \rightarrow O_3 + O_2$			

II. Properties of dielectric barrier discharge (DBD)

- Input parameters for modelling

- Gas composition at the inlet
- Pressure (98kPa)
- Gas temperature ($T_{\text{gas}}=300$ K)
- Duration of streamer action 50ns
- Repetition frequency (2kHz)
- Smearred out electron density $\left\{ \begin{array}{l} 5 \cdot 10^{13} \text{ cm}^{-3} \text{ (planar)} \\ \text{distribution like E-field (knife)} \end{array} \right.$

- Basic equations

- continuity equation $\frac{\partial n_j}{\partial t} + \nabla \cdot (n_j \vec{u} + \vec{\Gamma}_j) = S_j$

written down for 10 species

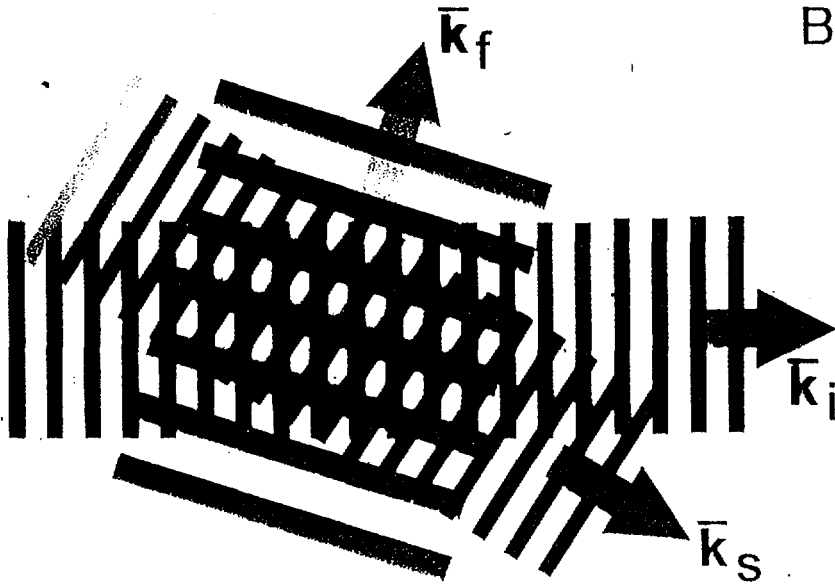
$\text{N}_2(x)$, NO, O_2 , N, O, NO_2

$\text{N}_2(A)$, $\text{O}_2(a)$, O_3 , e^-

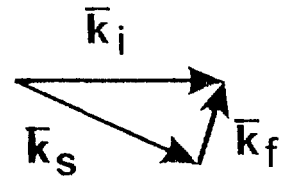
- Boltzmann equation for the electrons
 - rate constants of electronic collisions as function of E/n
- Master equation describing N_2 vibrational excitation by e-V, V-T and V-V collisions for 18 levels
- discretization of time and space coordinates
- resulting quantities:
 - concentration of species $n_j(x,t)$, in particular of NO,
 - vibrational temperature $T_{\text{vib}}(x,t)$ of nitrogen

Scattering from random media

Free: e.g. Thomson
Bound: e.g. Rayleigh



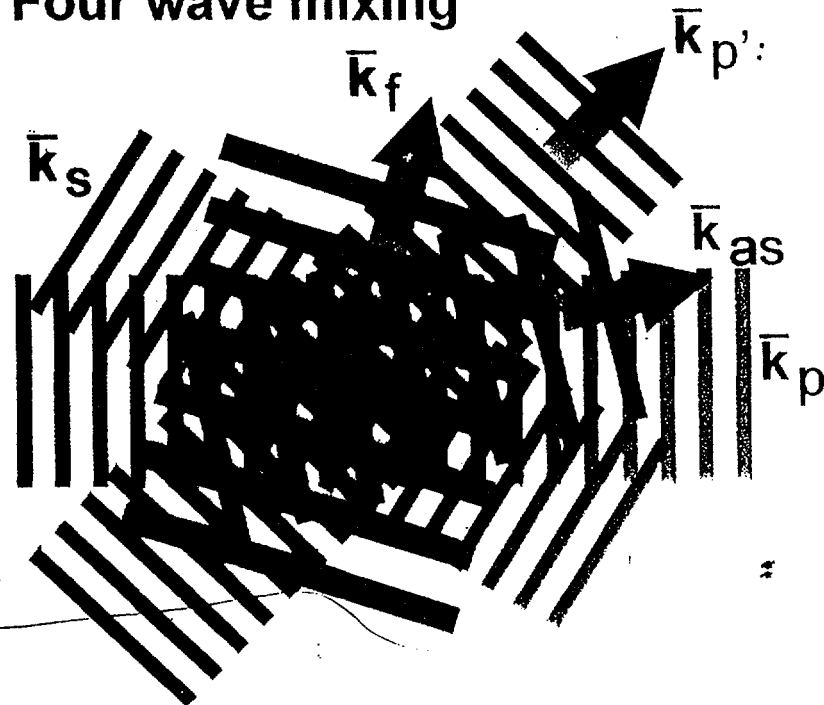
i : incoming wave
s : scattered wave
f : fluctuation



$$\bar{k}_i - \bar{k}_s = \bar{k}_f$$

The amplitude of fluctuations is thermally excited.

Four wave mixing



$$\bar{k}_p - \bar{k}_s = -\bar{k}_f$$
$$\bar{k}_{p'} - \bar{k}_f = \bar{k}_{as}$$

The amplitude of fluctuations is coherently excited.

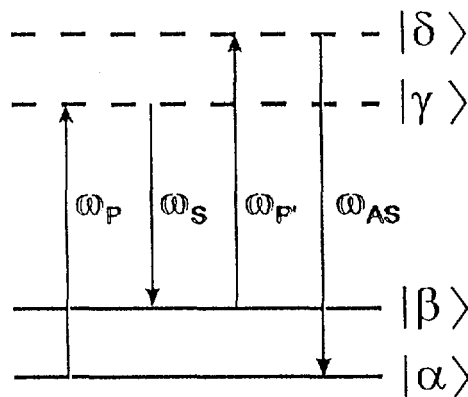
(10)

2. Introduction to CARS

2 pump beams $\omega_p, \omega_{p'}$ and 1 Stokes-beam ω_s generate CARS signal beam ω_{AS}

energy conservation:

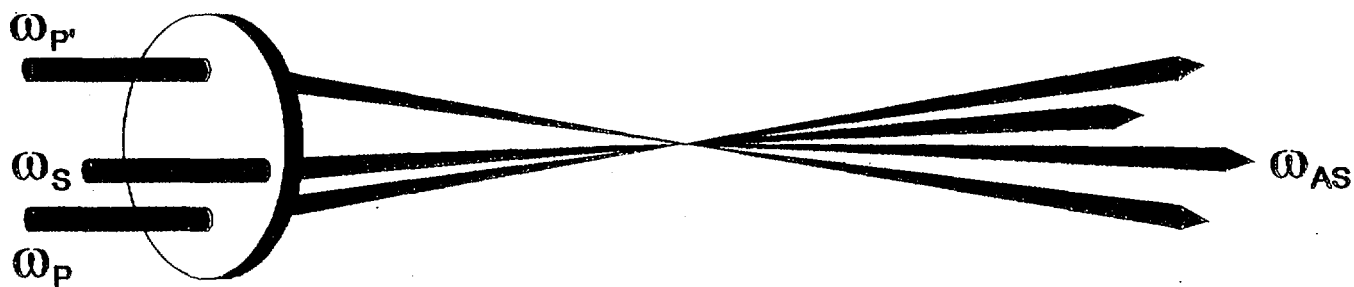
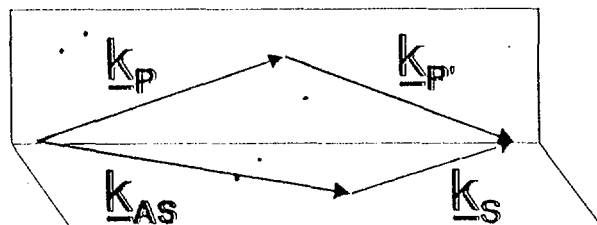
$$\omega_{AS} = \omega_p - \omega_s + \omega_{p'}$$



momentum conservation:

$$\underline{k}_{AS} = \underline{k}_p - \underline{k}_s + \underline{k}_{p'}$$

folded BoxCARS configuration



CARS signal:

$$I_{AS} = \iiint |\chi^{(3)}|^2 I_p(\omega_p) I_s(\omega_s) I_{p'}(\omega_{p'}) d\omega_p d\omega_s d\omega_{p'}$$

CARS susceptibility:

$$\chi^{(3)}(\omega_P - \omega_S) \sim \frac{\epsilon_0}{4\pi^2 \hbar} \left(\frac{m}{2\pi k_B T_{\text{Gas}}} \right)^{1/2} \left(\frac{2\pi c}{\omega_S} \right)^4 \sum_{\alpha, \beta} \left(\frac{d\sigma}{d\Omega} \right)_{\alpha\beta} n(\rho_\alpha - \rho_\beta) \\ \times \int \frac{\exp(-mv_z^2 / (2k_B T_{\text{Gas}}))}{\omega_{\beta\alpha}(1+v_z/c) - (\omega_P - \omega_S) - i\Gamma} dv_z + \chi_{\text{NR}}^{(3)}$$

where $\omega_{\beta\alpha}$: Raman transition frequency $\left(\frac{d\sigma}{d\Omega} \right)_{\alpha\beta}$: Raman cross section Γ : Lorentzian linewidth $n(\rho_\alpha - \rho_\beta)$: population difference
of rovibrational states

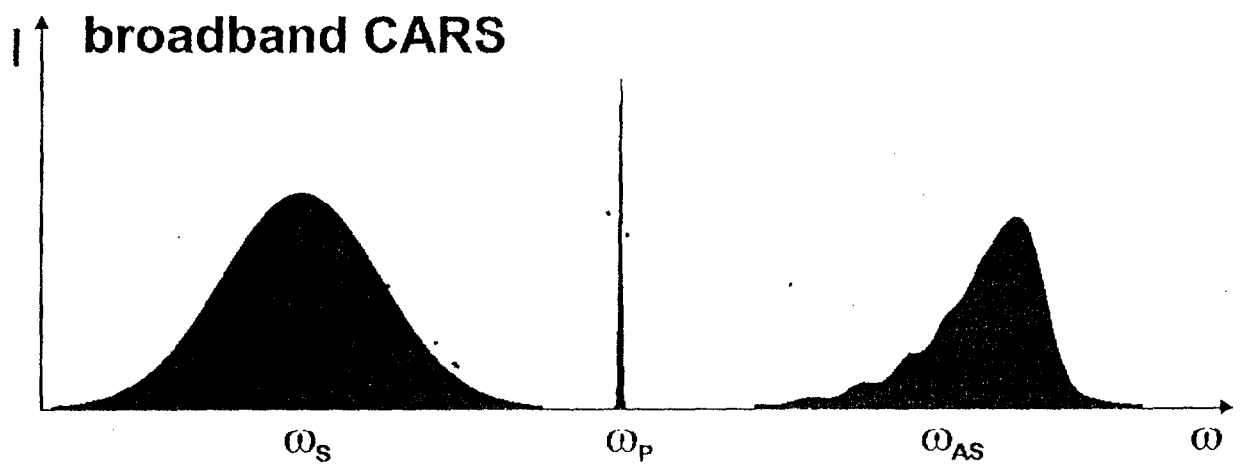
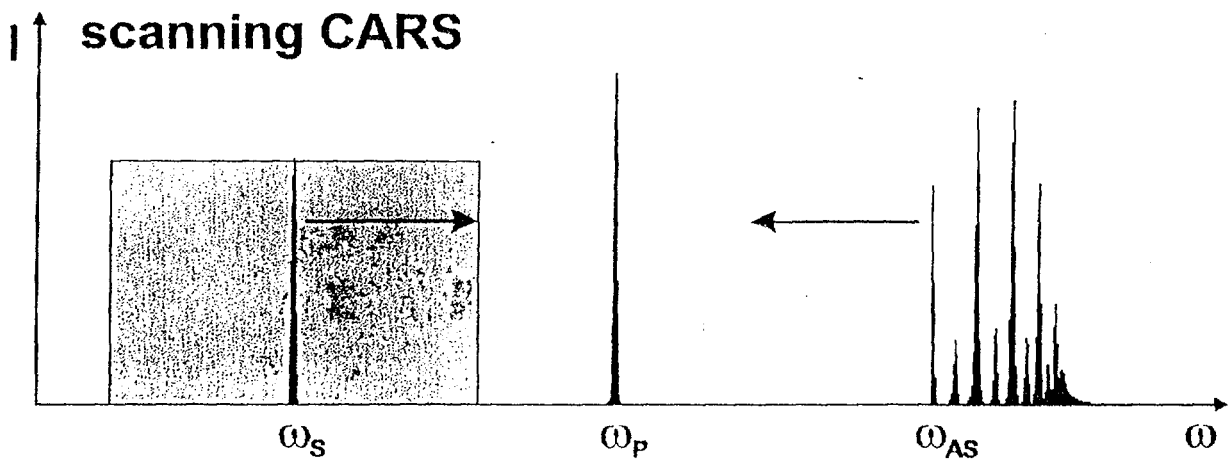
⇒ If molecular properties are known,
 $n(\rho_\alpha - \rho_\beta)$ can be derived from measured
 CARS spectra.

⇒ rovibrational population distribution

⇒ gas temperature T_{Gas}

⇒ density of probed species

2 methods to measure a CARS spectrum:



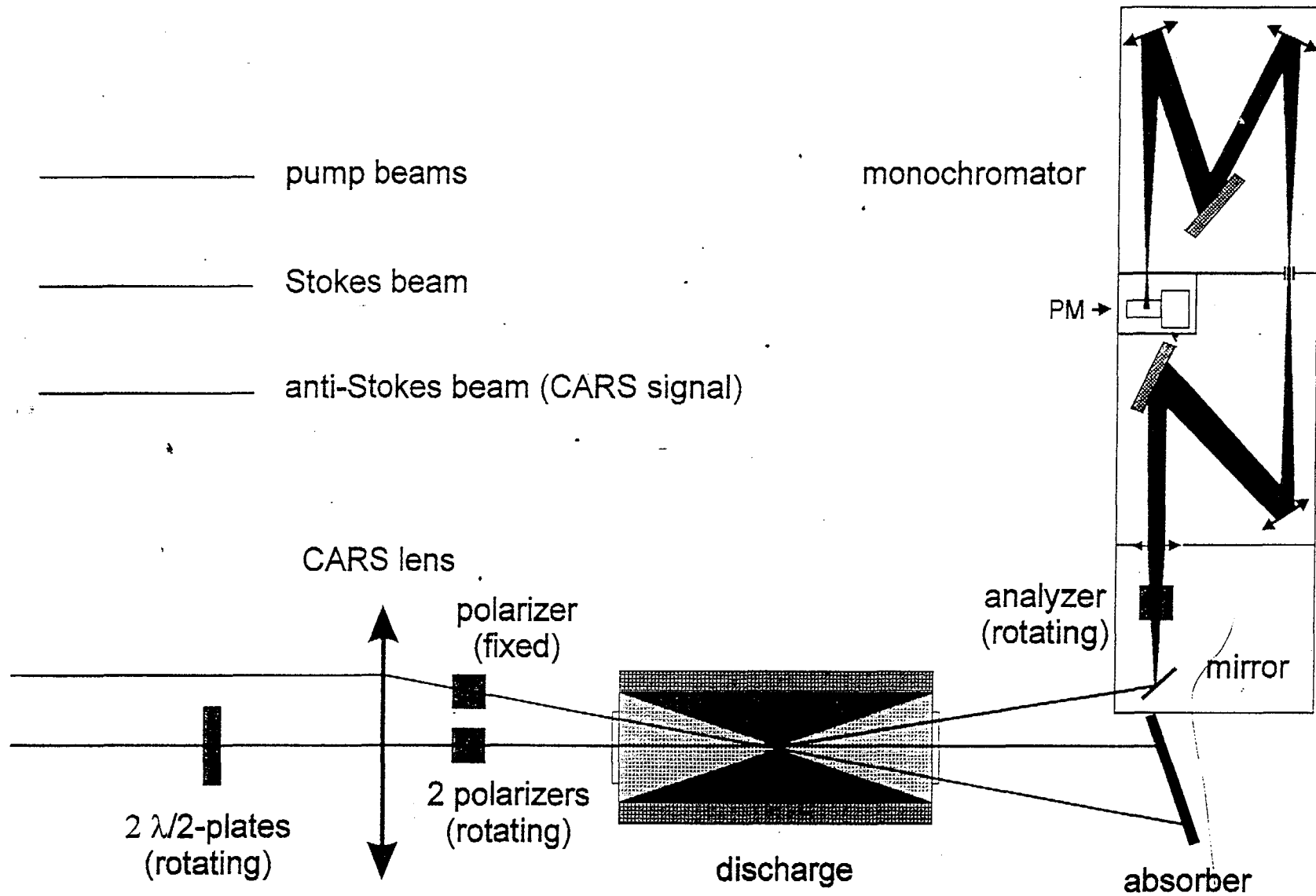
scanning CARS:

stationary or reproducible pulsed systems

broadband CARS:

single shot measurements possible

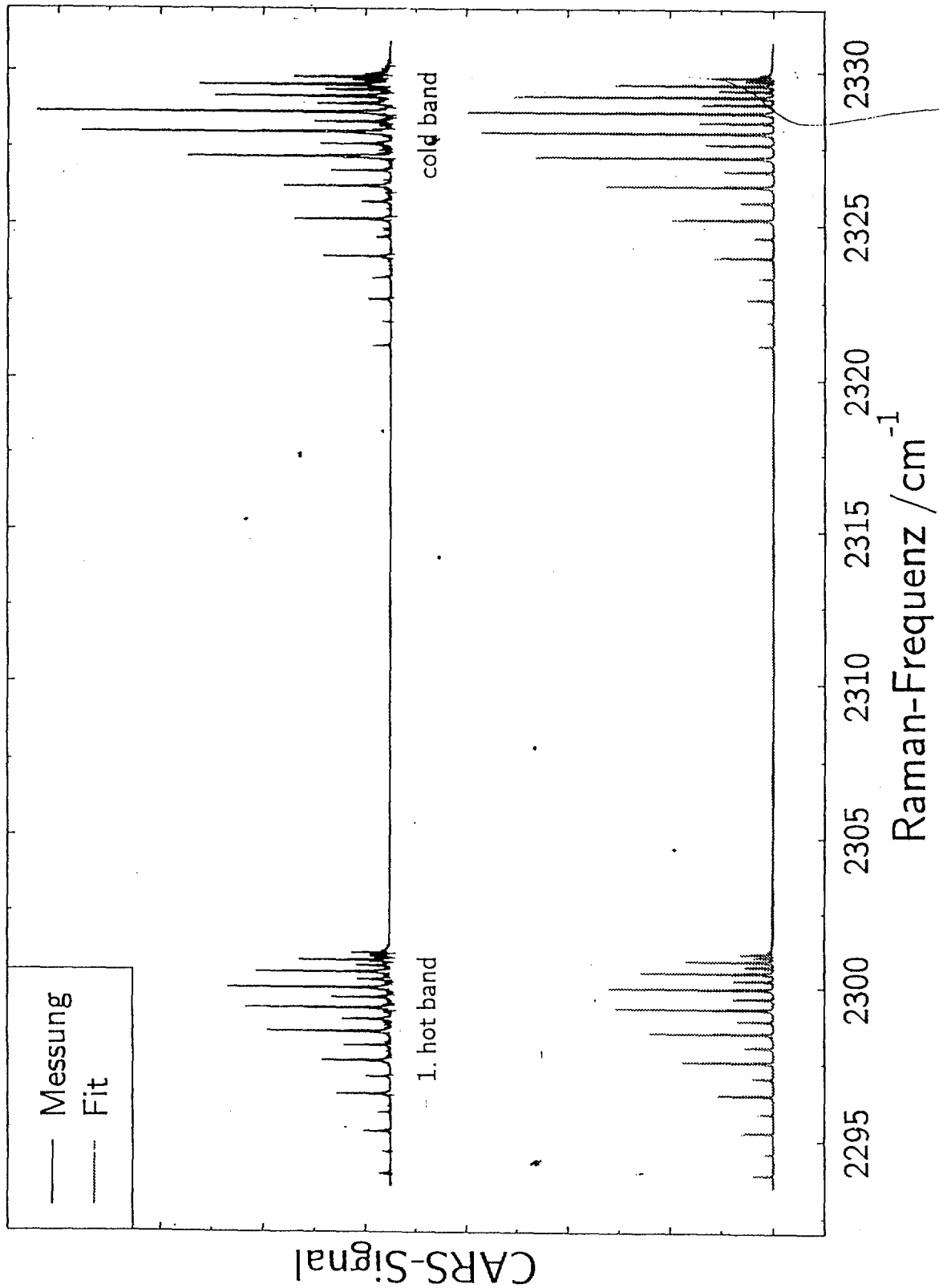
Experimental setup for suppression of nonresonant background



Bestimmung der Temperatur

74

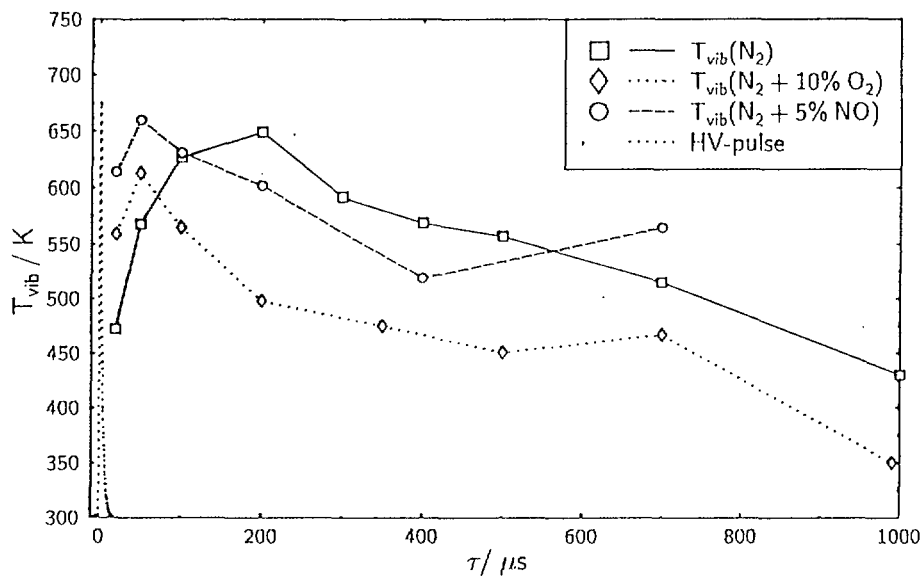
- Vergleich mit Theoriespektren



liefert $T_{\text{vib}} = 3352 \text{ K}$ und $T_{\text{rot}} = 471 \text{ K}$.

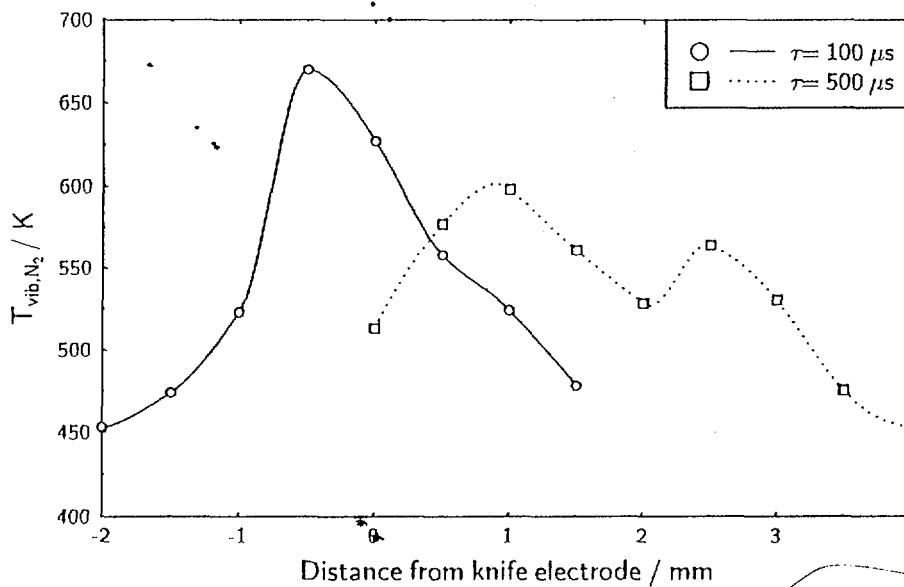
II. Properties of dielectric barrier discharge (DBD)

- A few experimental results



Pressure 20 kPa, gas flow rate 6 standard l/min, $u=3.5$ m/s

- Addition of O_2 reduces vibrational temperature of N_2

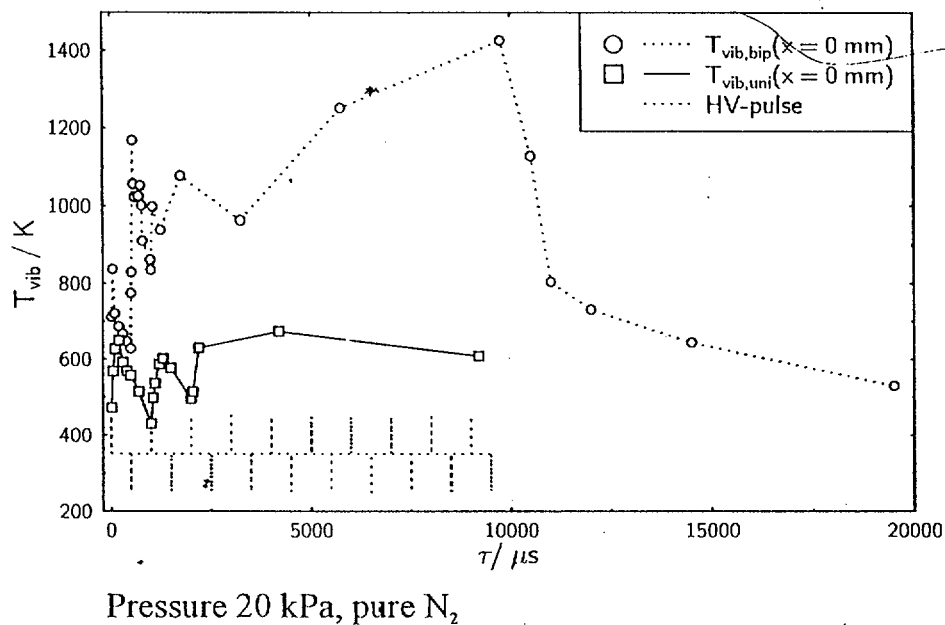


Pressure 20 kPa, pure N_2 , two instants at 100 μs and 500 μs .

- In about 400 μs the maximum moves over 1.4 mm \rightarrow 3.5 m/s.

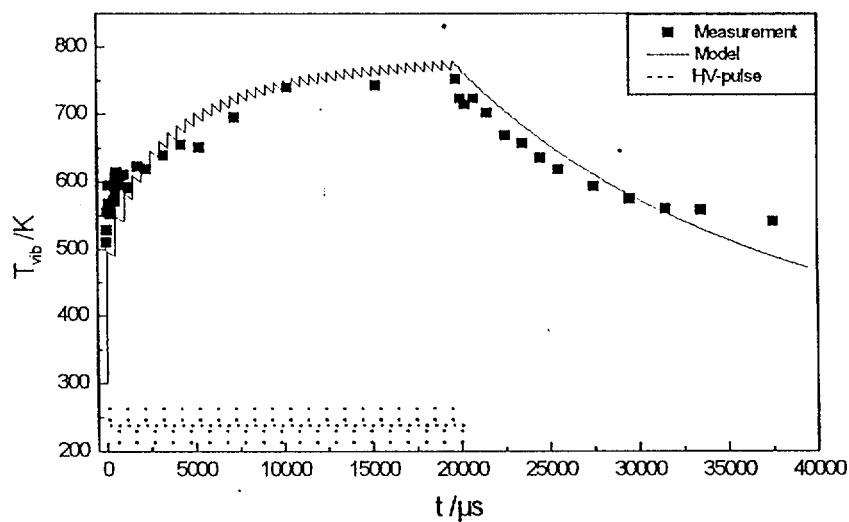
II. Properties of dielectric barrier discharge (DBD)

- a few experimental results



- Bipolar excitation enhances T_{vib}

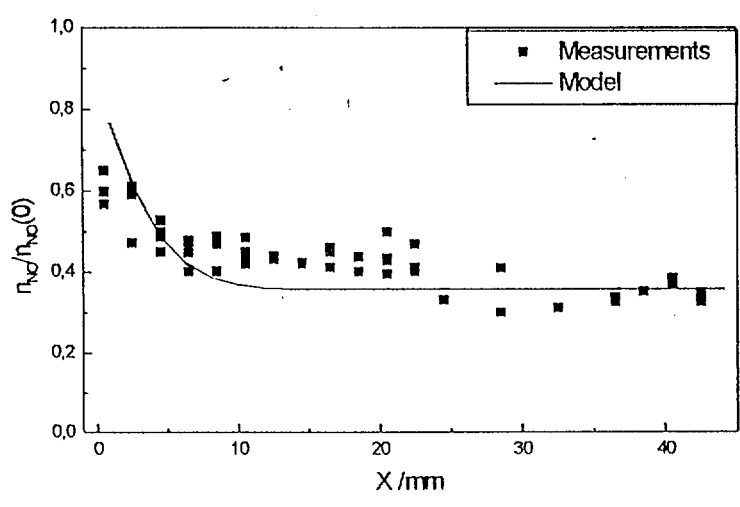
- comparison theory with experiment



- Decay time of T_{vib}=10 ms

II. Properties of dielectric barrier discharge (DBD)

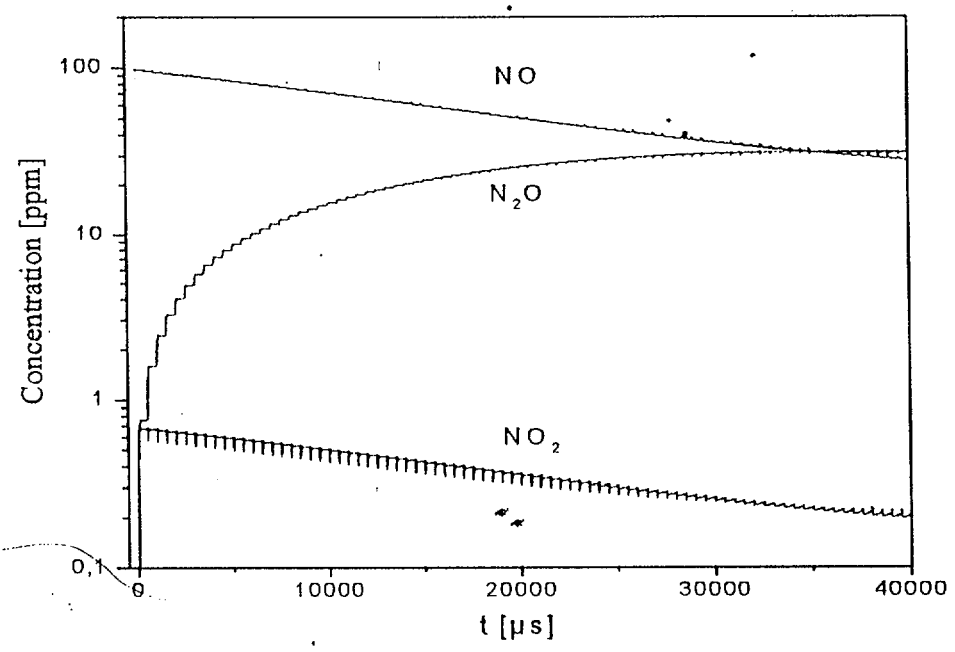
- comparison theory with experiment



Pressure 98 kPa, bipolar operation 2x20 pulses, rep. rate 1 kHz
99% N₂, 1% NO at inlet, u=0.2 m/s.

- Reduction of NO amounts 60% over a distance of 10 mm

- Calculated NO_x concentration



- The discharge prefers the oxidation path: N₂O formation after 20 ms.

III. cw and pulsed microwave discharge

118

Objectives:

cw microwave discharges

- microwave generated plasma near equilibrium
- energetic efficiency not satisfying (70 eV/NO molecule)
- NO reduction by a factor of 7 possible
- wall burning must be avoided by gas swirl
- nozzle flow required to produce non-equilibrium state

pulsed microwave discharges

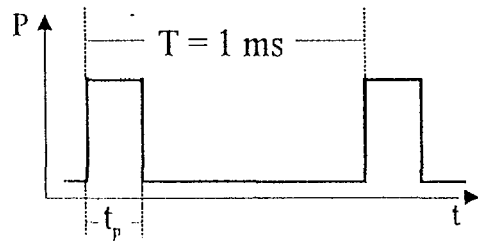
- wall burning can be suppressed by proper microwave pulse length (*viewgraph 18*)
- control of the electronic energy distribution influences distinct chemical reaction paths (reductive path)
- gas temperature remains low, reduction of energy consumption
- control of the NO reduction process via pulse duration and pulse repetition frequency
- variation of microwave frequency advantageous (2.45 GHz, 2.9 GHz, 9 GHz)

The role of the pulse duration

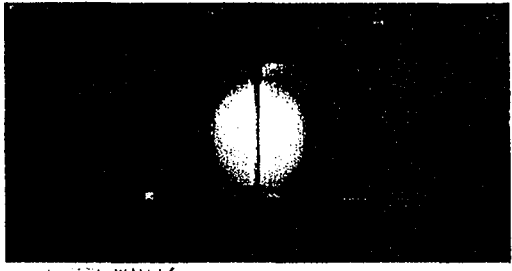
Gas: Nitrogen

Pressure: 1 mbar

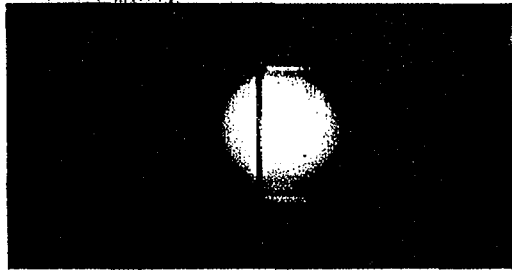
Pulse power: 2,7 kW



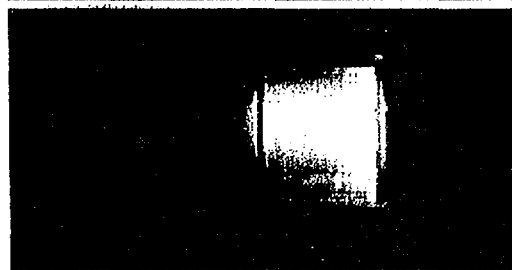
coupling window



$t_p = 0,1 \text{ ms}$
←
microwave



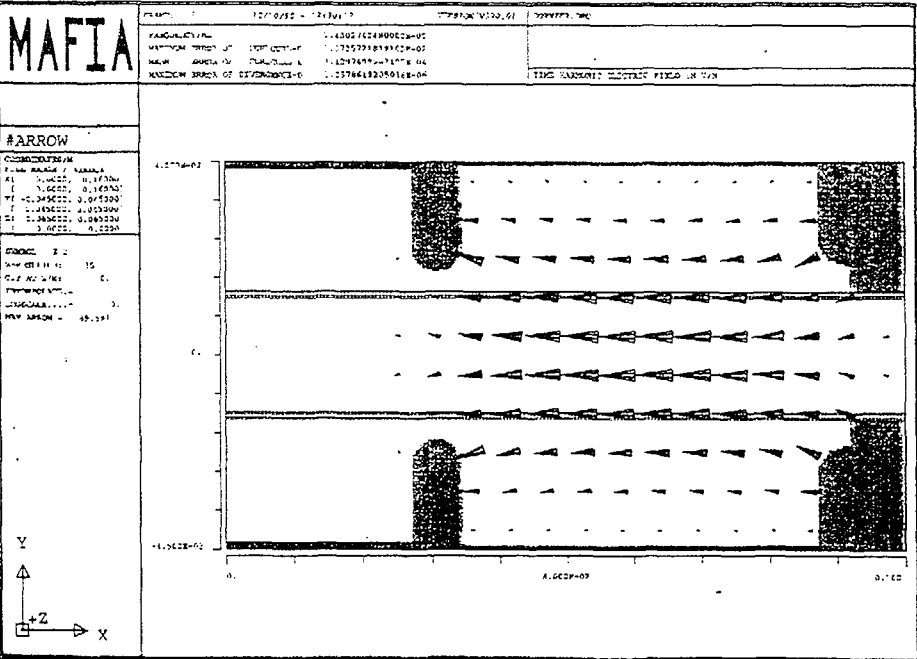
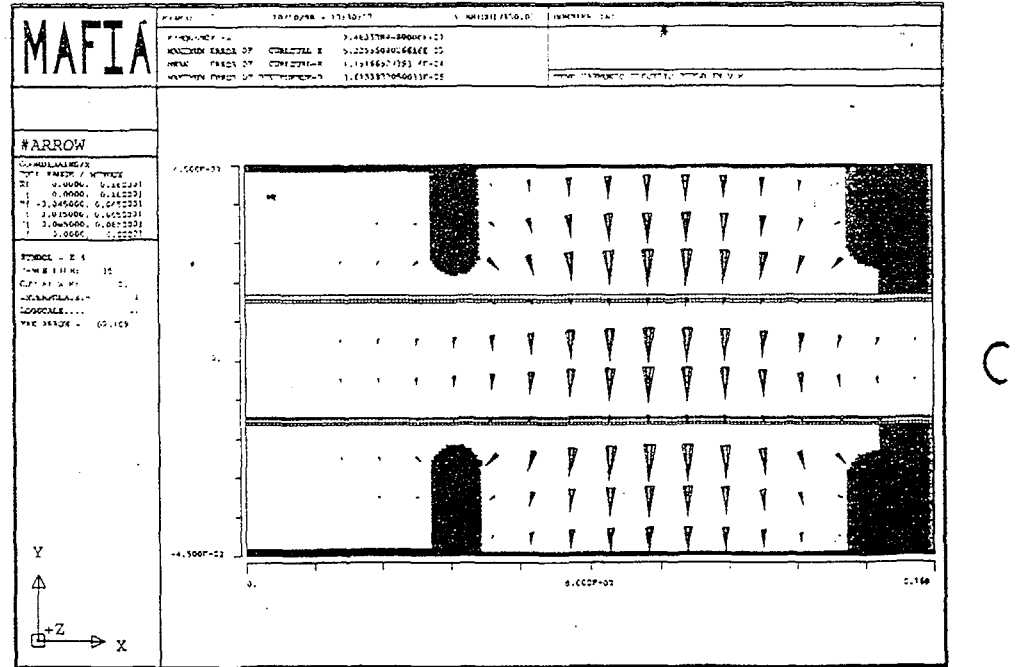
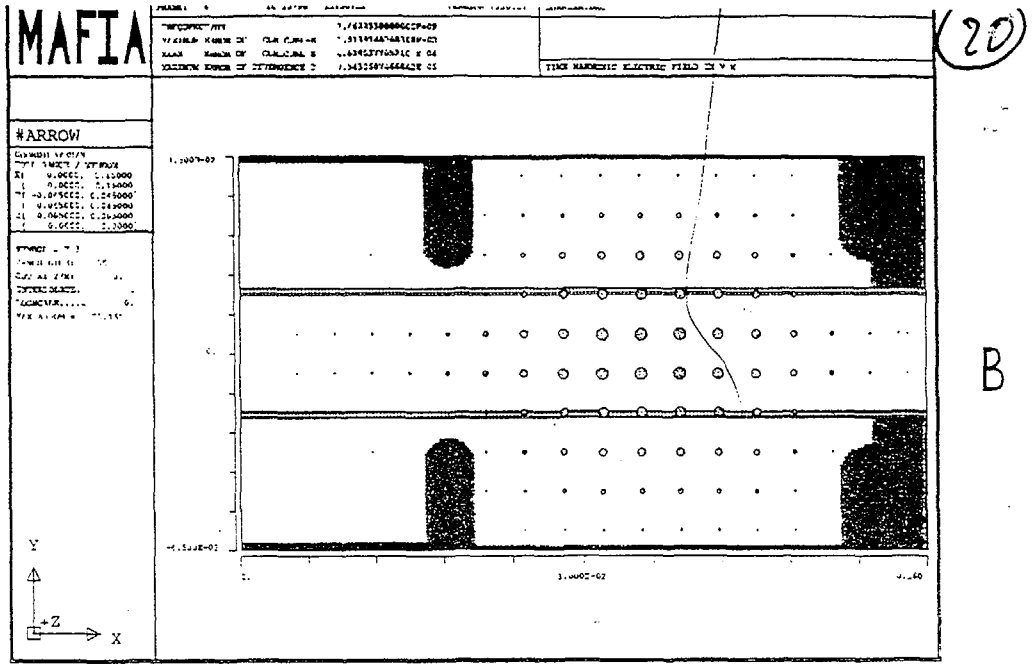
$t_p = 0,15 \text{ ms}$
←
microwave



$t_p = 0,2 \text{ ms}$
←
microwave

30 mm

Field distribution of resonator modes



A

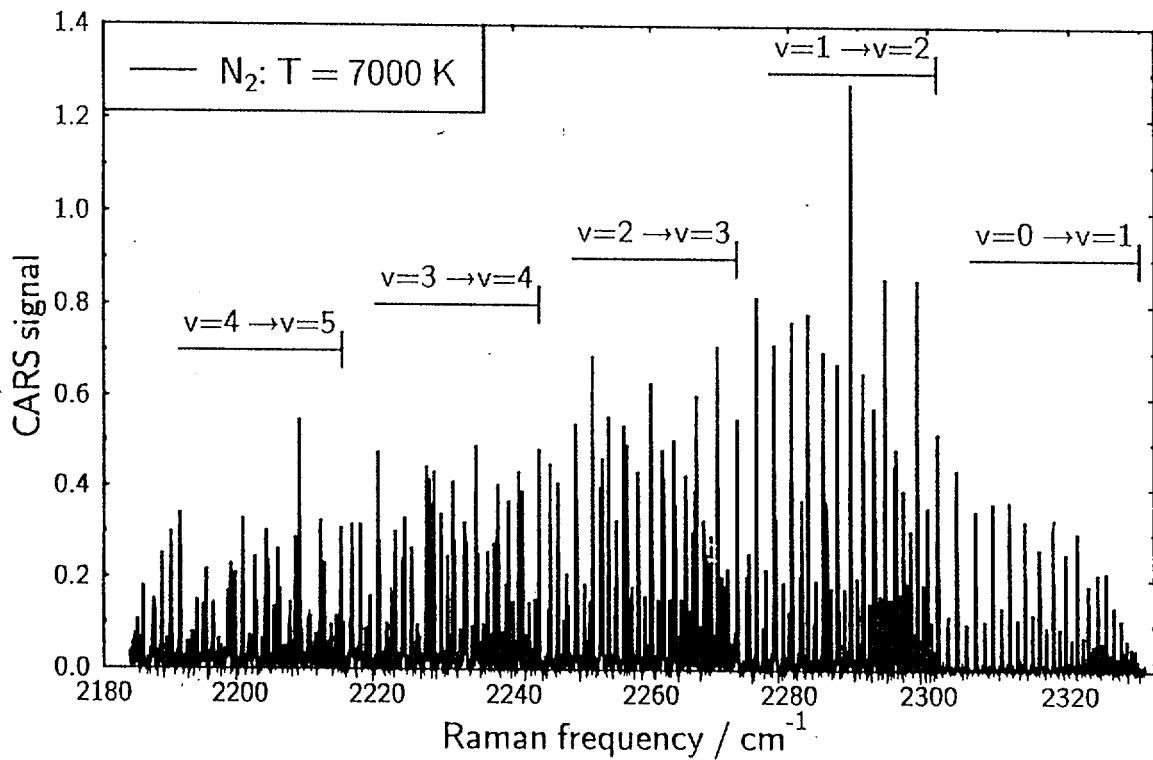
B

C

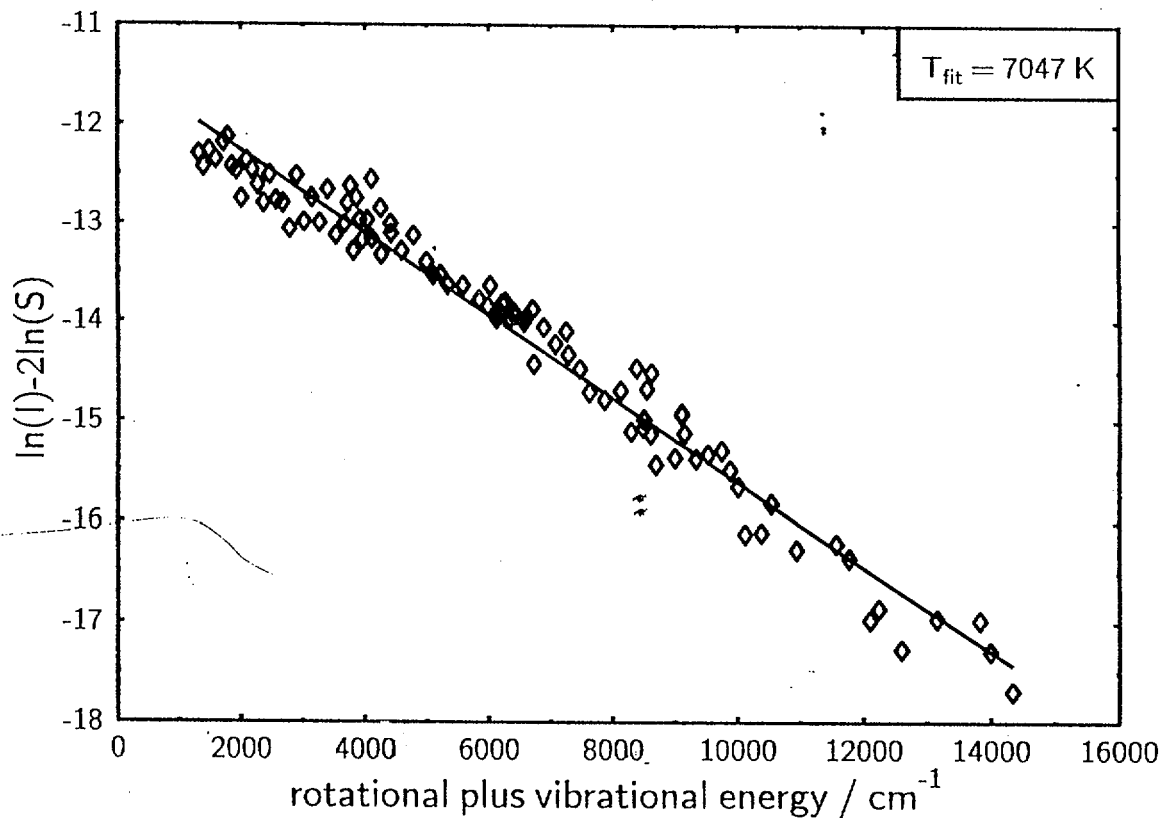
III cw and pulsed microwave discharge

(21)

- CARS rovibrational spectrum of N_2

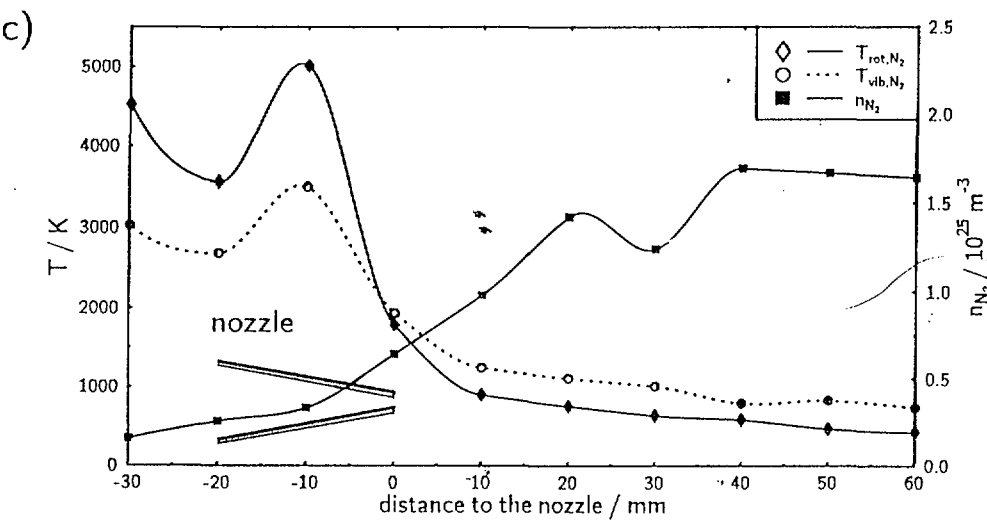
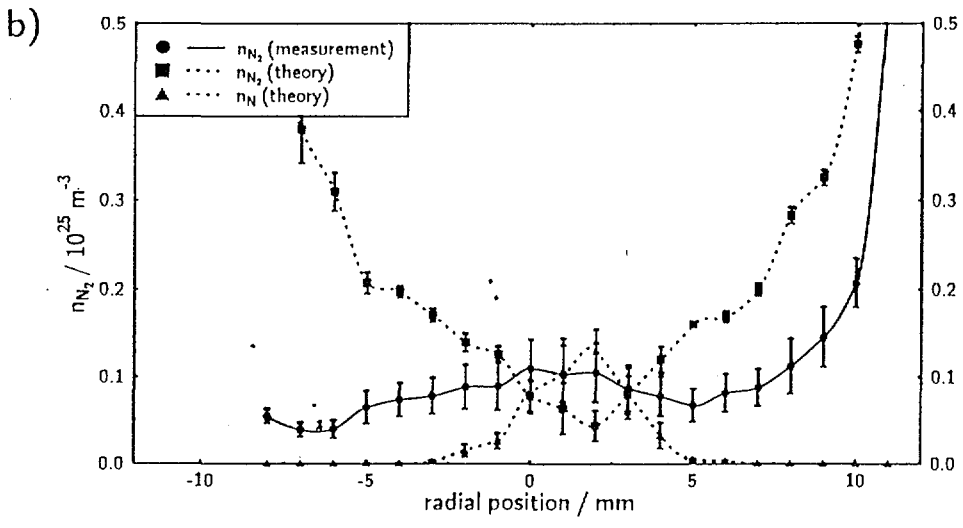
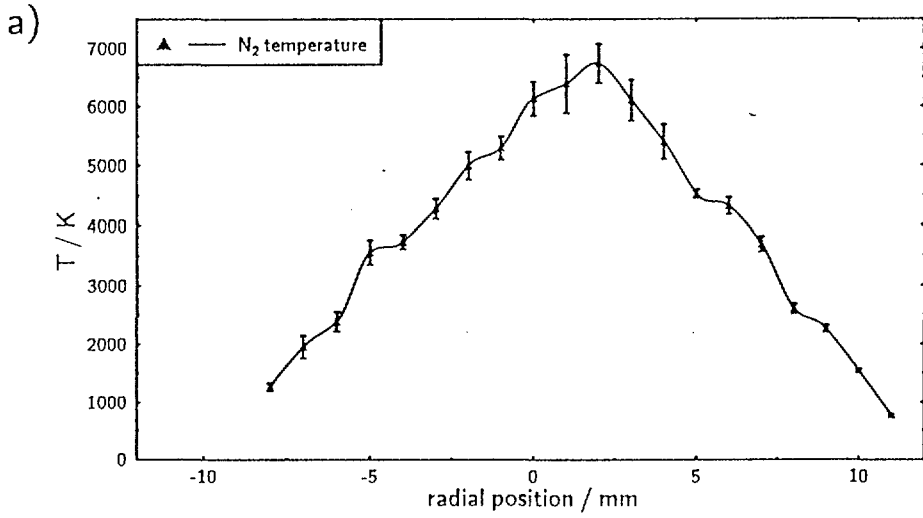


- Evaluation of T_{rot}



III cw and pulsed microwave discharge.

- Temperature and density profiles in a N₂ discharge



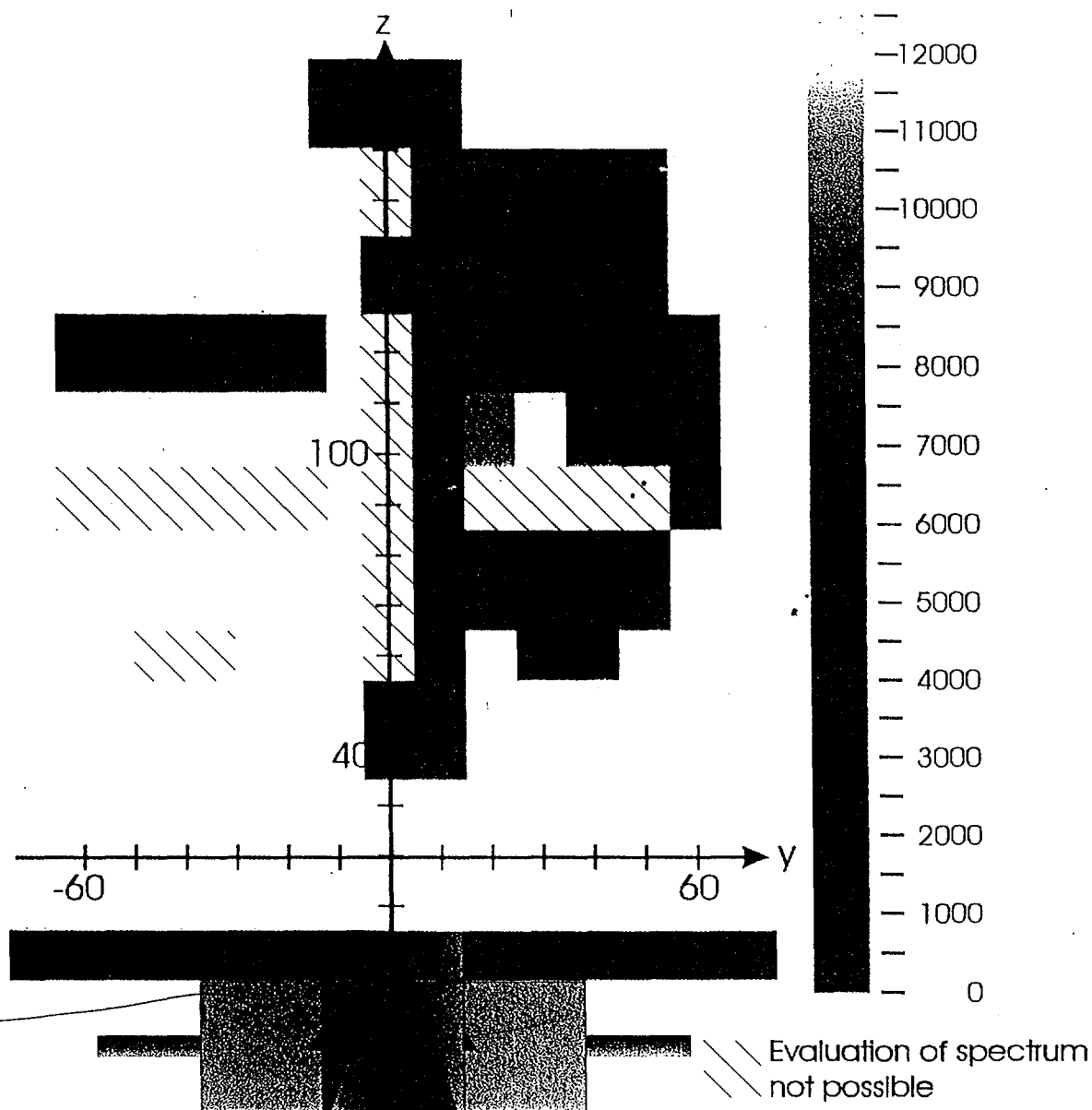
Measurements: MW-discharge

NO-concentration in the reaction chamber

Parameters: $P_{\text{micro}} = 800 \text{ W}$, $p = 1000 \text{ hPa}$,

plasma: 28 slm N_2 ,

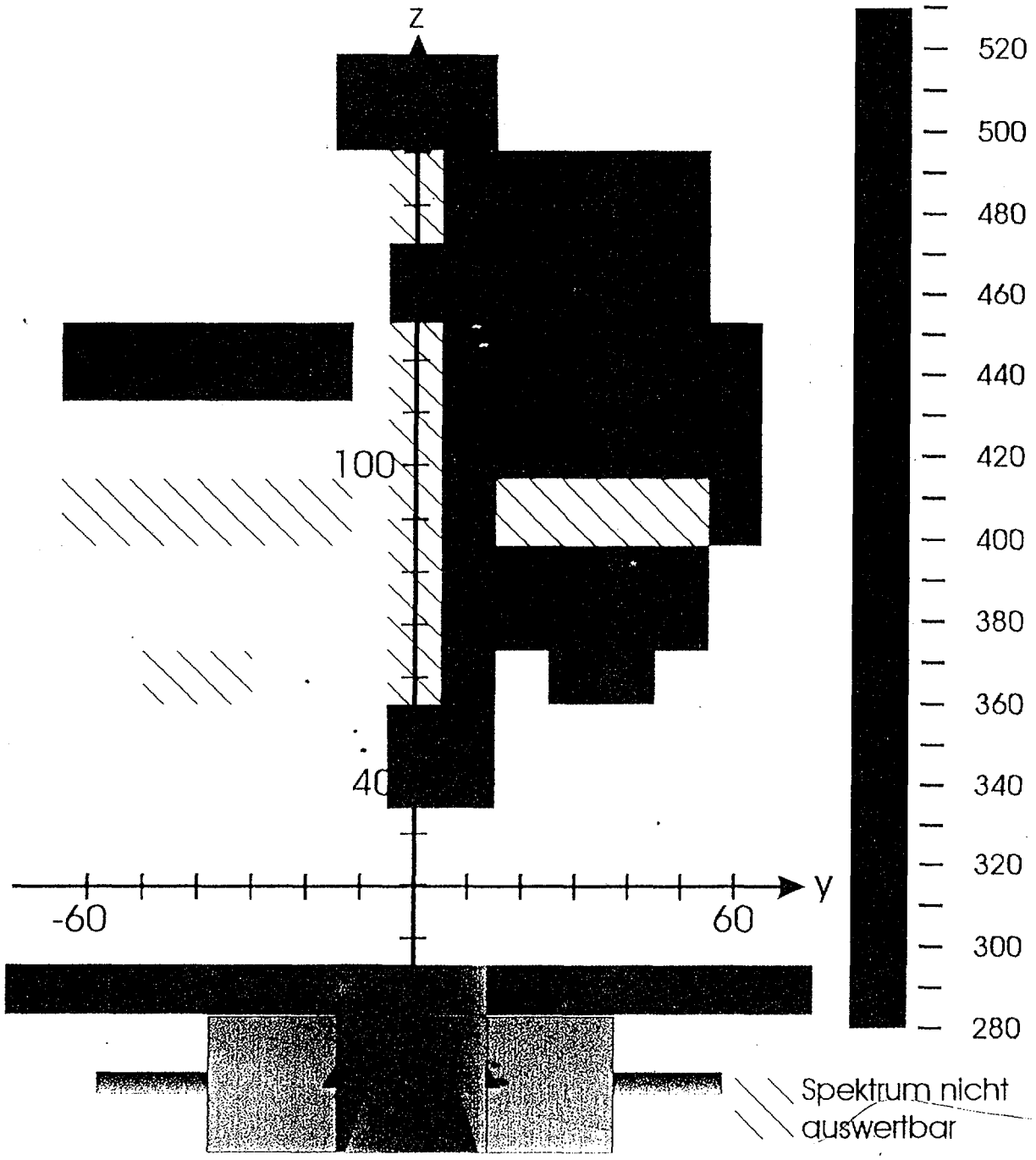
exhaust: 14 slm (24000 ppm NO in N_2).



Summliches Temperaturprofil von NO in der Reaktionskammer.

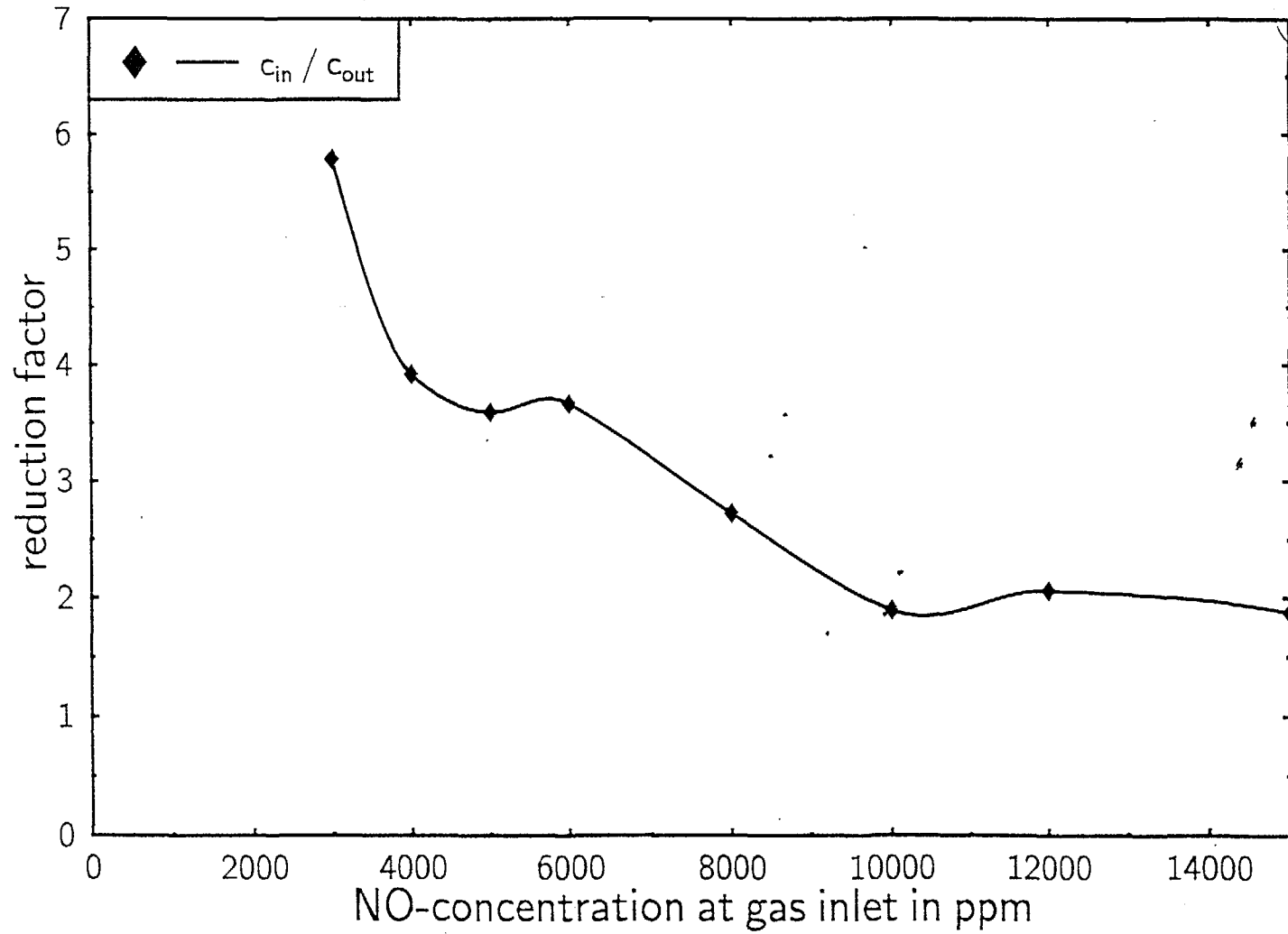
Entladungparameter: $P = 800 \text{ W}$, $\nu = 2,45 \text{ GHz}$.

Gasfluss: 28 slm N_2 , Abgas: 14 slm (24000 ppm NO in N_2).

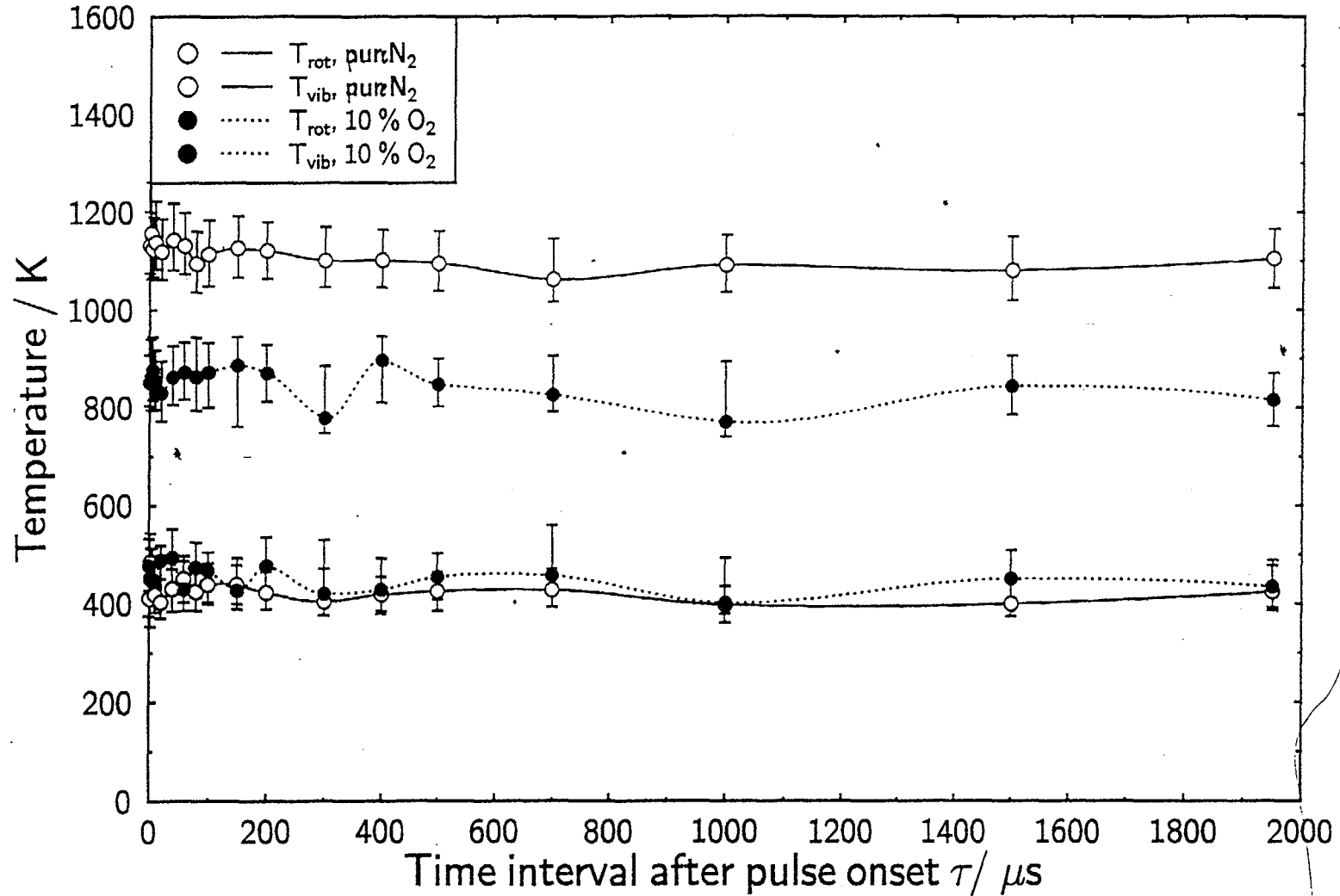


III cw and pulsed microwave discharge

- NO reduction factor

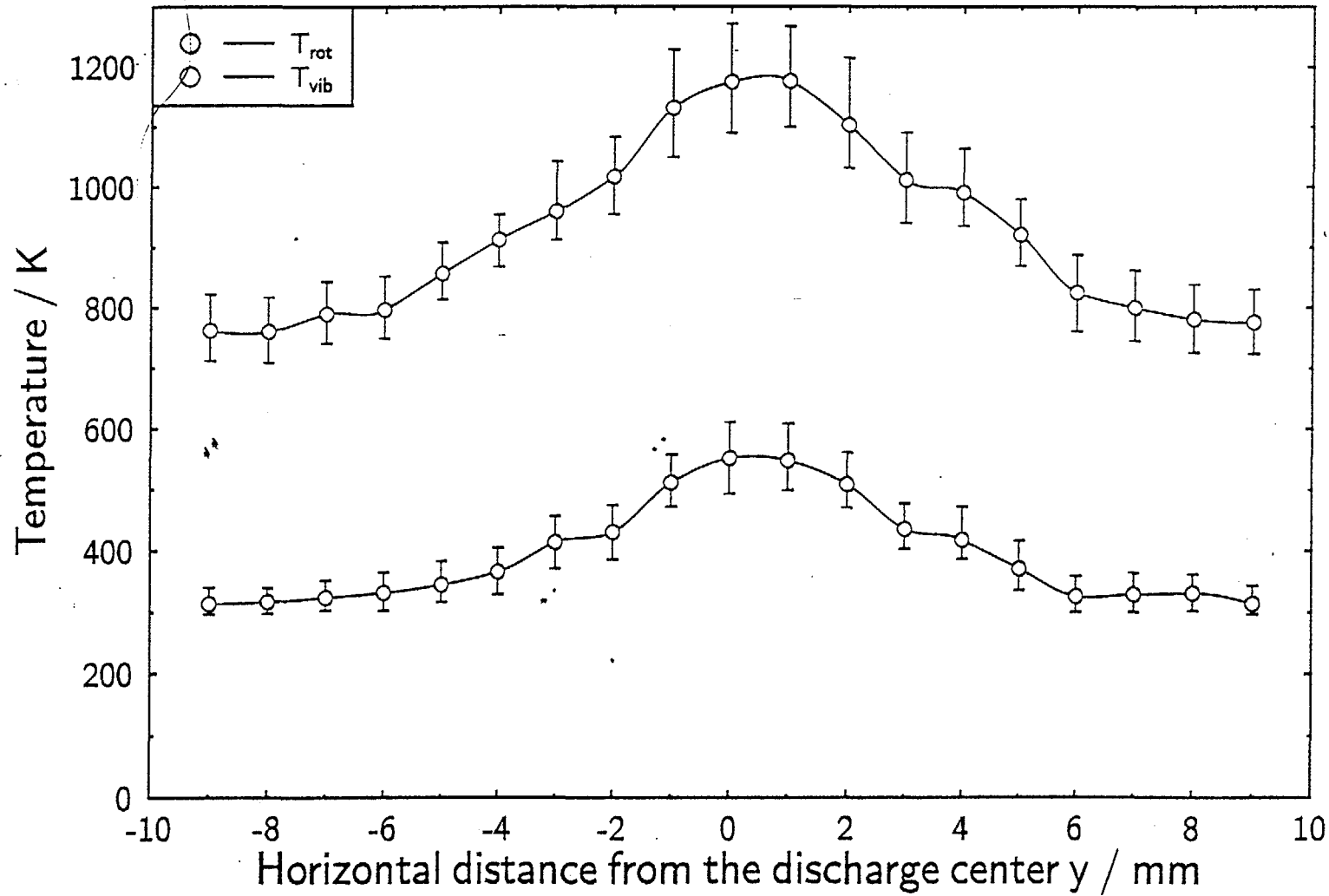


Temporal temperature profiles in a pulsed discharge



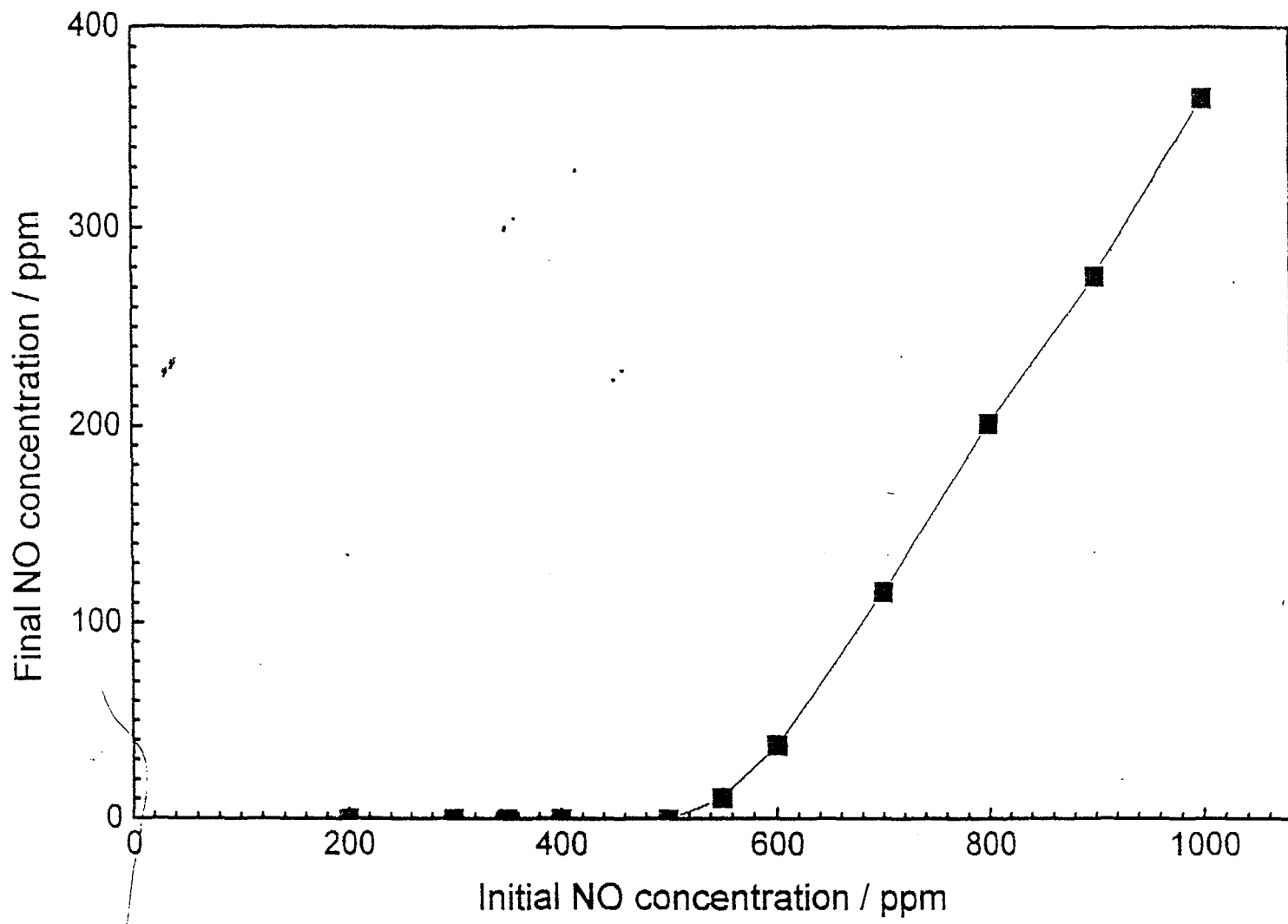
$\nu_{\text{rep}} = 500 \text{ Hz}$, $T_{\text{puls}} = 40 \mu\text{s}$, $p = 98 \text{ kPa}$, $\phi_{\text{total}} = 25 \text{ slm}$, 10% O_2 in N_2 , position: $x,y,z = (0,0,0) \text{ [mm]}$, $W = 44 \text{ mJ}$

Temperature profiles in a pulsed discharge



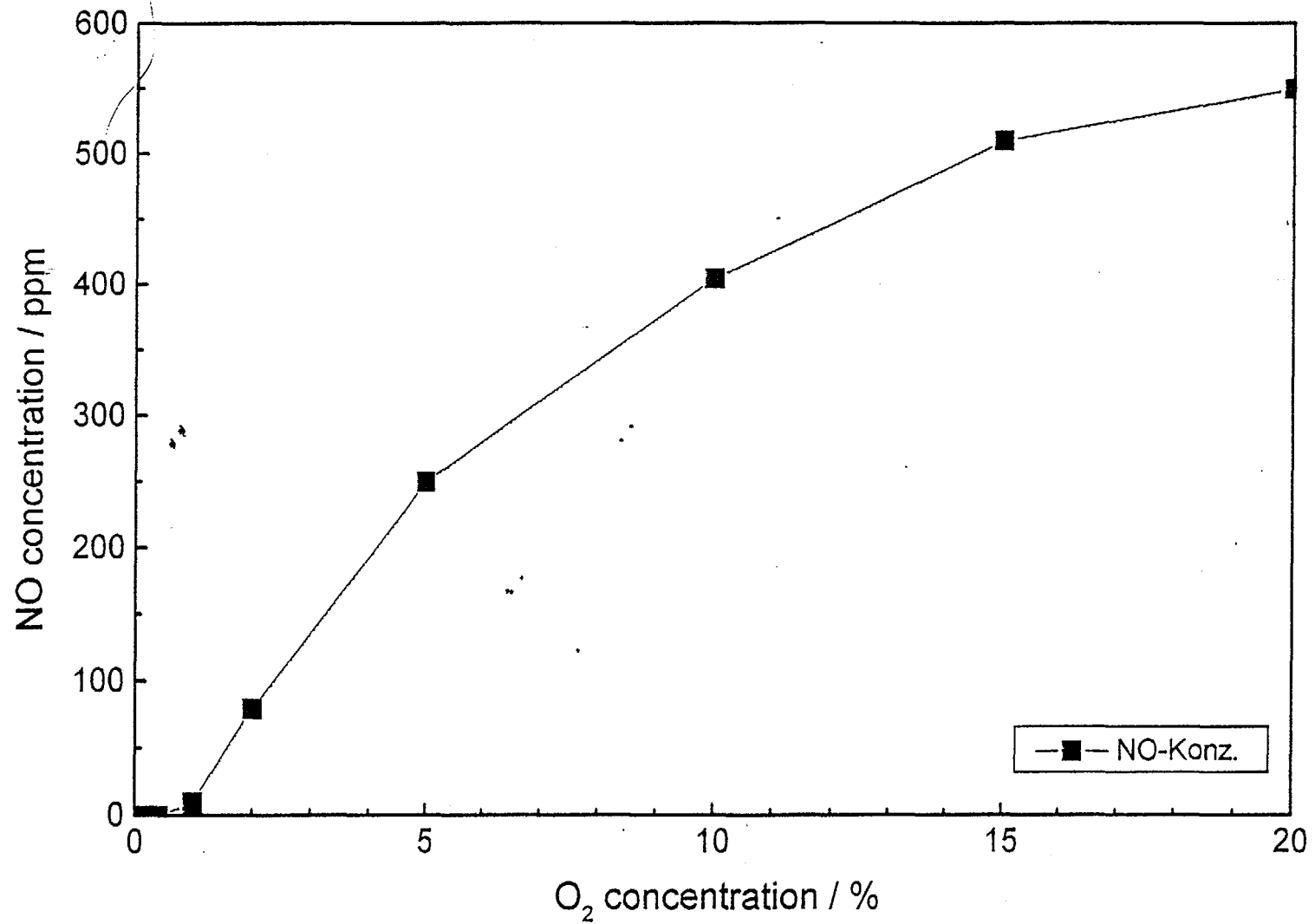
$\nu_{rep} = 500$ Hz, $T_{puls} = 80 \mu s$, $p = 98$ kPa, $\tau_{meas} = 80 \mu s$, $\phi_{N_2} = 25$ slm, position: $x,y,z = (0,y,0)$ [mm], $W = 30$ mJ

NO reduction in a N₂/NO mixture



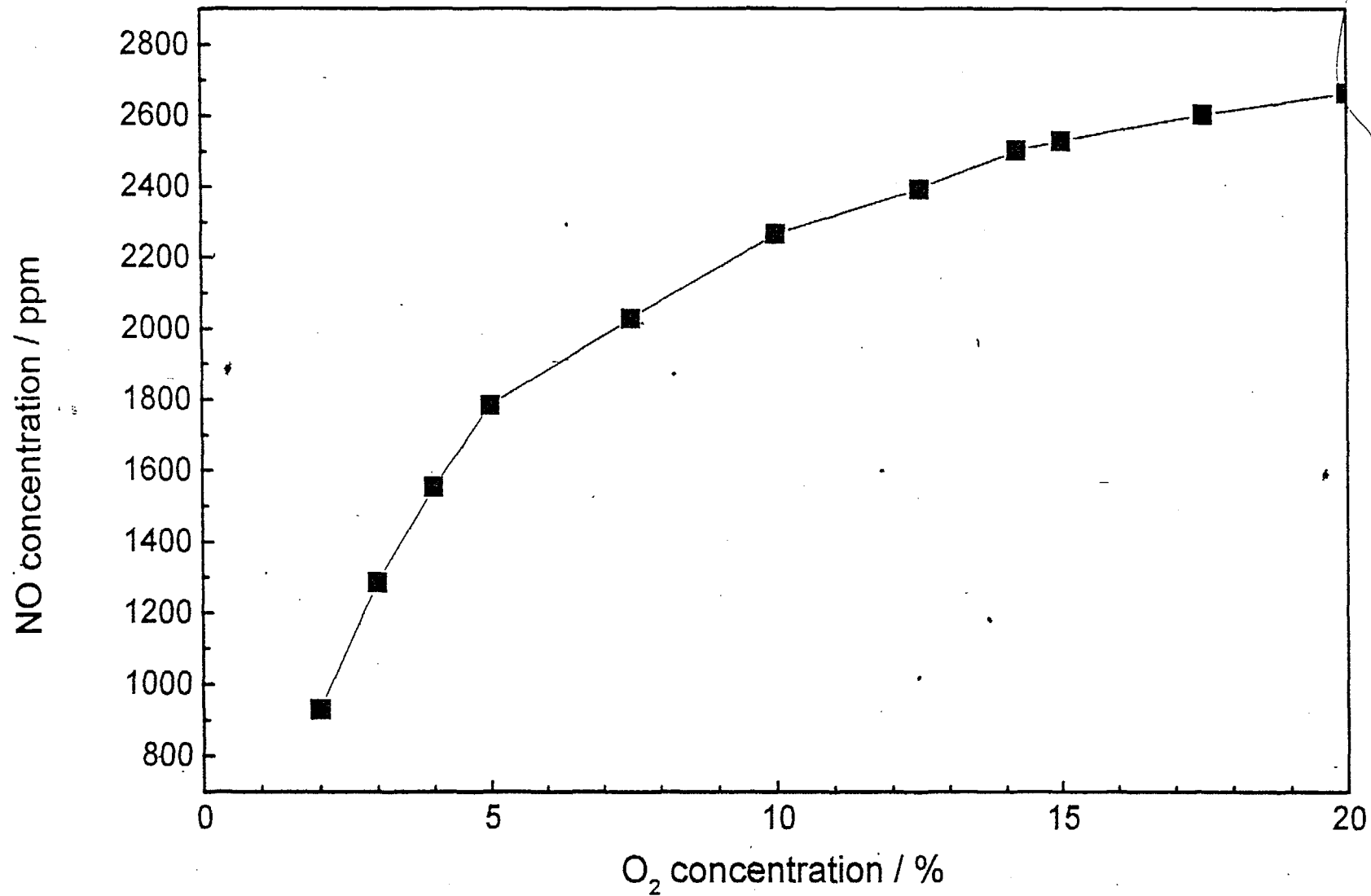
$\nu_{rep} = 2,5 \text{ kHz}$, $T_{puls} = 50 \mu\text{s}$, $p = 98 \text{ kPa}$, $\phi_{total} = 25 \text{ sim}$, $W = 30 \text{ mJ}$

NO formation in N₂/O₂ mixtures



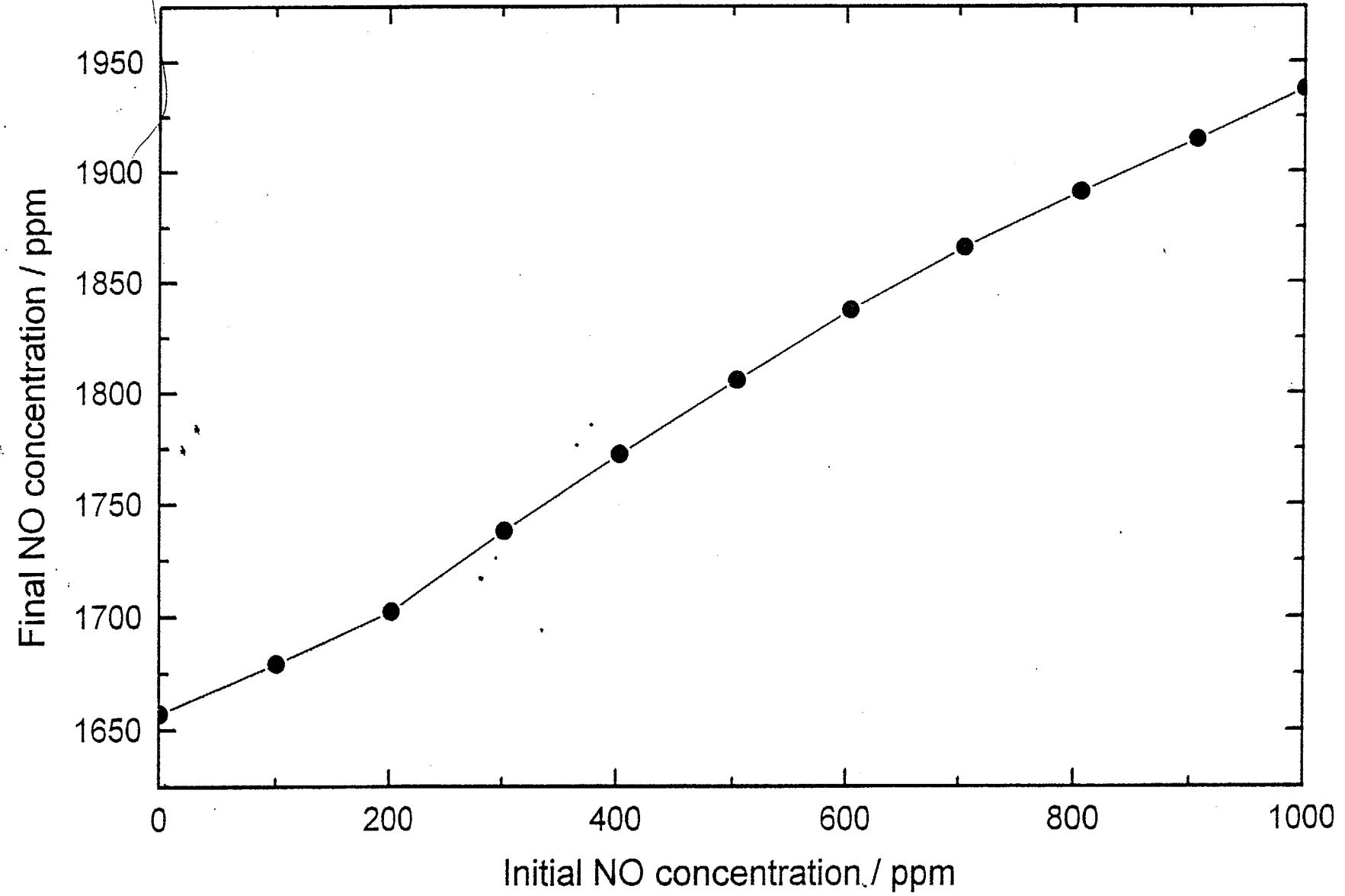
$\nu = 500 \text{ Hz}$, $T_{\text{puls}} = 40 \text{ } \mu\text{s}$, $p = 98 \text{ kPa}$, $\phi_{\text{puls}} = 25 \text{ slm}$, $W = 44 \text{ mJ}$

NO formation in N₂ / O₂ mixtures



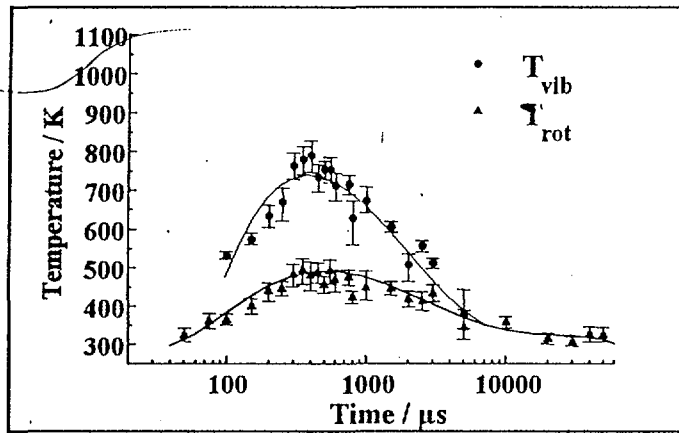
$v_{rep} = 4 \text{ kHz}$, $T_{puls} = 50 \text{ } \mu\text{s}$, $p = 98 \text{ kPa}$, $\phi_{total} = 25 \text{ sim}$, $W = 33 \text{ mJ}$

NO concentration in a NO/O₂/N₂ mixture

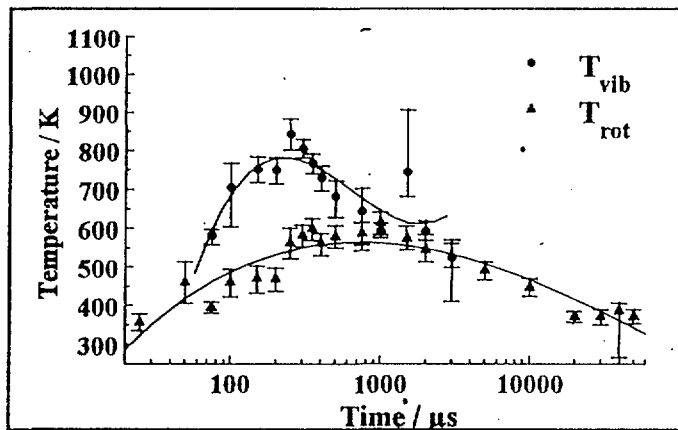


CARS measurements on a pulsed O₂ microwave discharge

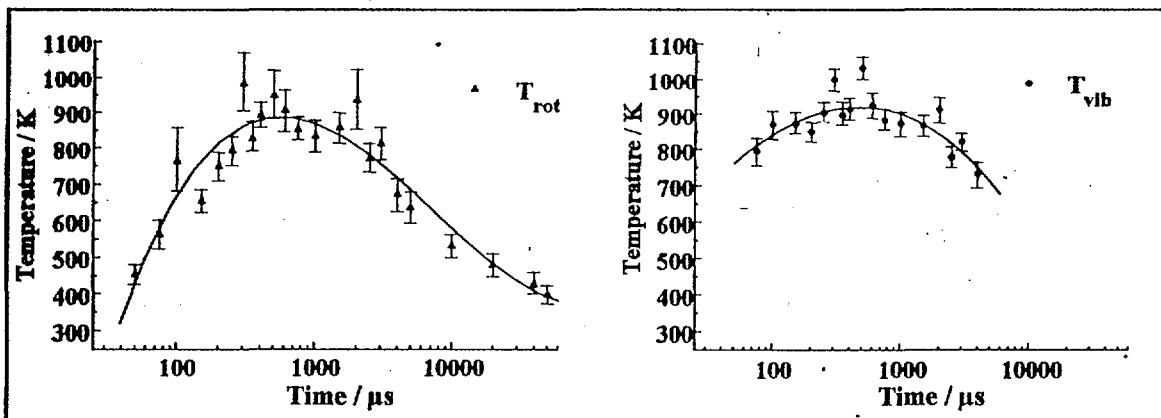
a) Pressure $p = 1$ mbar: $\tau_{VV} = 123.0 \mu\text{s}$, $\tau_{VT} = 7.8$ s



b) Pressure $p = 5$ mbar: $\tau_{VV} = 23.2 \mu\text{s}$, $\tau_{VT} = 0.81$ s



c) Pressure $p = 10$ mbar: $\tau_{VV} = 9.6 \mu\text{s}$, $\tau_{VT} = 0.06$ s



Temporal behaviour of rotational and vibrational temperature

$T_{\text{puls}} = 300 \mu\text{s}$, $\nu_{\text{rep}} = 20$ Hz

IV. Summary and Conclusions

(33)

Dielectric Barrier Discharges

- $T_{\text{rot}} \approx T_{\text{gas}}$

$T_{\text{vib}} \approx 800\text{K}$ ($p=98\text{ kPa}$), 1400 K ($p=20\text{ kPa}$)

NO-reduction by a factor of 3 in N_2/NO mixtures

Admixture of O_2 deteriorates the NO-reduction

Modeling

- 1D- Models of chemical and vibrational kinetics
- Good agreement with the experimental data

Microwave discharges

- Pulsed operation preferred to cw because of:
 - less average microwave power
 - creation of non-thermal plasmas
 - better control of the chemical processes

Perspectives for a higher NO-reduction in $\text{N}_2/\text{O}_2/\text{NO}$ mixtures

By Fax
Tel. Off. : +91 (22) 550 5331 (Direct)
+91 (22) 550 5050 Ext. 3649/3627
Fax : +91 (22) 550 5151 / 551 9613

JAI P. MITTAL

Fellow of Indian National Science Academy (FNA)
Fellow of Indian Academy of Sciences (FASc)
Fellow of National Academy of Sciences (FNASc)



Director
Chemistry Group
BHABHA ATOMIC RESEARCH CENTRE
Government of India
Trombay, Mumbai-400 085, INDIA.

Ref: CG/NILES/98/ 904

November 19, 1998

Dear Prof. Badr.,

Thank you very much for your kind hospitality during my stay at Cairo. It is to congratulate you and your colleagues at NILES for arranging such an excellent International Conference on Lasers & Applications. The conference as well as training course were scientifically stimulating and culturally very informative. Please accept my thanks for making it possible for me to have this wonderful experience. I really enjoyed the company of the distinguished scientists and it was an unique experience.

With all the Best Wishes to you and your colleagues. Hope to see you soon.

With warm regards,

Yours Sincerely,

(J.P. Mittal)

Prof. Yehia Badr
Dean
National Institute of Laser Enhanced Sciences
Cairo University
EGYPT

Fax No. (202) 572-9499

माघ :
LEPHONE :
पता : बार्क-चेम्बूर, बम्बई.
LEGHAMS: BARC-CHEMBUR, BOMBAY.
फ़ोन : ०११-६१०१७/०११-६१०२२ बार्क इत
LEX : 011-61017./011-61022 BARC IN
संख्या : ११-२२-५५६०७५०
X NUMBER : 01-22 5680750



भारत सरकार
GOVERNMENT OF INDIA
भाभा परमाणु अनुसंधान केन्द्र
BHABHA ATOMIC RESEARCH CENTRE

डॉ. अहमद,
बम्बई-४०० ०८५,
TROMBAY,
BOMBAY-400 085

Dr. S. A. Ahmad,
Head,
Atomic Spectroscopy Section

Ref: BARC/SPEC/SAA/ 627 /98

November 23, 1998.

Dear Professor Badr,

I am unable to find proper words to thank you for kindness, love and respect which I received in abundance. It was a wonderful experience to be in Egypt and I thoroughly enjoyed my trip.

The International Workshop and the Conference were nicely planned and organised. During the International Conference (November 14-16, 1998) there were many good talks - well prepared and well presented. As the topics chosen covered a broad spectrum, this conference enabled me to know about things which are not covered in specialised meetings we usually attend.

I hope that in the coming two or three years, NILES would stand for National Institute of Laser for Excellent Science. I hope the collaborations and cooperation would enable you to achieve this and may God help you in your endeavor.

Once again, thanking you for all that you did to make my visit to Egypt a very pleasant and memorable one which I will cherish all my life.

Please convey my regards to all my friends at NILES.

With kind regards,

yours sincerely,

(S. A. Ahmad)

Professor Yehia Badr
Dean of National Institute of Laser
Enhanced Sciences
Cairo University, Egypt.

FAX NO: 00 - 202 - 5729499



Université Paris-Sud

LABORATOIRE DE SPECTROSCOPIE ATOMIQUE ET IONIQUE
Unité de Recherche Associée au C.N.R.S.

Bâtiment 350, Centre d'Orsay
91405 ORSAY Cedex - FRANCE

TELECOPIE

From): Dr NOURREDDINE MOUSSAOUI
: 01.69.15.75.58
: 01.69.15.58.11

à (to) : Prof. Dr. YEHIA BADR
Fax : 00.202.5729490
Adresse : NIL 3. CAIRO UNIVERSITY

Message

Dear Prof. Dr. YEHIA BADR.

THANK YOU VERY MUCH!

Best Regards.

Nombre de pages à suivre :
Total number of pages to follow :

اجتماعيات

سداد الشروحات

وعات الصغيرة

التأخر في سداد
لخبرة في الارتقاء
من التدريب الكيفي
والتعثر في السداد
ي أسس سليمة

المستوى القومي تبني
الاعداد وناهل ١٠ الاف
صفير ويشمل اعداد
تبهور وتدريب المتدربين
وتم اختيار الجمعية
ات الشروعات الصغيرة
الجهة المنفذة فهي ٥٠
جهات المركزية المختلفة
ات او مصالح او أجهزة
لف المشروع ١٢ مليون
هو اعداد وناهل ٢٠٠
١٠ الى الاف صاحب
اساليب الادارة الحديثة
الصغيرة مع التركيز
ين الصدد والعاملين
رصة عمل في مجالات
ة والتجارة والخدمات
مدروق الاجتماعى في
اجهة حدة البطالة التي

بن عام الصندوق
ثلا ان برنامج تنمية
بالصندوق استطاع
من الشركات القابضة
لأعمال العام عن طريق
كيلة العمالة المصرية
بدائل المناحة ٢٧ الف
ن اساس المعاش المبكر
ملا لاعادة الاستعاب
تعامل مع ٣٤ عاملا
صغيرة كما تم إنشاء
تمويل من الصندوق
ب مهنى تابعة لجهات
٦٨ و مبرسة ثانوية
ويما للمهن والمدربين



جامعة القاهرة

المعهد القومي لعلوم الليزر

يقعد المعهد القومي لعلوم الليزر
مؤتمره الدولي الثالث لعلوم الليزر
وتطبيقاته فى الفترة من ١٤-١٦
نوفمبر ١٩٩٨ تحت رعاية

الاستاذ الدكتور فاروق اسماعيل

رئيس جامعة القاهرة
بحضور نخبة من كبار العلماء
لائقاء المحاضرات والبحوث وتبادل
الخبيرات مع اسانذة المعهد
والجامعة وذلك فى مجالات نظم
الليزر التطبيقات الصناعية
الاتصالات الضوئية القياسات
اطراف الليزر التطبيقات البيئية
والزراعية والديولوجية والطبية كما
ينظم المعهد بالاتفاق مع

UNIDO ومنظمة ICS

بورة تدريبية دولية لباحثين من
مختلف الدول العربية والافريقية
فى الفترة من ٩-٢١ نوفمبر ١٩٩٨
وسينم عقد عدة ورش عمل طبية
الاولى منها ١٧-١٩ نوفمبر فى
E.N.T. وسيعلن عن الباقي تباعا
امين المؤتمر

أ. د. يسر عز الدين

وكيل المعهد للدراسات
العليا
رئيس المؤتمر

أ. د. يحيى بدوي

عميد المعهد

جامعة الازهر

مستشفى الحسين الجامعى

قسم الاشعة

وحدة الرنين المغناطيسى

تعلن مستشفى الحسين
الجامعى عن بدء تشغيل
احد جهاز فحص بالرنين
المغناطيسى بمستشفى
الحسين الجامعى

بسر اقتصادى ٢٠٠ جنيه
للحالة بدون الصبغات
ومجانا لغير القادرين
وادارة المستشفى على
استعداد للتعاقد مع
الشركات والهيئات

للاستعلام ت ٥١٠٥٣٤٥
٥١٠٤١٤٦ فاكس ٥١٠٢٩٠

مستشفى الكات

مركز تفتيت الحصوات

بدون جراحة
بدون تخدير
بدون مناظير
ت ٣٢٥٣٣١ / ٣٤٨٣٧٩ / ٣٤٨٣٧٦

مستشفى النصر التخصصى

مركز العدسات اللاصقة

مدينة نصر خلف جامع
رابعة العدوية
٢٦٠٣٨١٥ / ٢٦٠٣٨١٩ / ٢٦٠٣٨١٧

خبير عالمى

فى جراحة العظام

بمستشفى القاهرة التخصصى
تستقبل لمدة اسبوعين من الاحد
١١/٨ الى الاحد ١١/٢٢

أ. د. طلعت مكسيموس

استشارى جراحة العظام والمفاصل
ورئيس جماعة اطباء مستشفى
هادلى ميسمورياان بواشنطن
الولايات المتحدة يقوم

أ. د. عادل ابراهيم

استشارى جراحة العظام
بالكشف على المرضى وتحضيرهم
للجراحة للحجز مستشفى القاهرة
ت ٢٥٧٣٩٢٣ ا.د. عادل ابراهيم
١٢/٢١١٦٥٢٥

مستشفى الدلتا الدولى بطنطا

تستضيف الخبير الفرنسى لويس فيليت
Prof. Dr. Louis villite
لاجراء جراحات العمود الفقرى
فى الفترة من ٨-١٣ نوفمبر ٩٨

عيادة حضيرية يوميا بالمستشفى
ت ٣١٥٠٠١ - ٣١٥٠٠٢ - ٣١٥٠٠٣

مستشفى القوات الجوية

تعلن
عن زيارة الخبير الانجليزى
الدكتور/ روبين فيليبس
خبير جراحات القولون والشرح
بمستشفى سان مارك بانجلترا
للعمل بالمستشفى الجوى فى
الفترة من ١١/٧ الى ١١/١٢ ١٩٩٨

ويتم مناظرة الحالات يوميا بقسم
الجراحة
مع تحيات شركة

أ.د. احمد عكاشة

رئيس الجمعية المصرية للطب النفسى
ومجلس الادارة وجميع الاعضاء يهتئون

أ. د. فتحي مقلدى

لتعيينه نائبا لرئيس
جامعة قناة السويس
واستمراره فى الاسهام الايجابى للنهوض
بالطب النفسى بطب قناة السويس

الدكتور سمير ثابت

رئيس شركة

نوفارتس - مصر

ورؤساء القطاعات والمديرون والعاملون
بادارة امراض المناعة يهتئون

الاستاذ الدكتور

رشاد برسوم

بمناسبة انتخابه امينا عاما
للجمعية العالمية
لامراض الكلى
ويتمنون لسيدته دوام التوفيق

تتشرف شركة

ميديكيب للتجارة والمقاولات

وكل بشركة Dornier الالمانية
بدعوة سيادتكم لحضور ورشة
العمل الطبية وعنوانها
تلكسات الاربطة والواتار
والزوائد العظمية بواسطة
احدت اجهزة الموجات
التصادمية

LATEST ESWT TECHNOLOGY IN TREATING:

- HEEL SPUR
- TENDINITIS CALCARE
- EPICONDYLOATHY
- HUMERI RADIALIS
- (TENNIS ELBOW)
- EPICONDYLOPALHY
- HUMERI ULNARIS
- (SOLF EL.BOW)

يلقى المحاضرة:
PROF. DR. AN
DREAS KEPPLER
(MEDICAL PHYSICIAN)

ويعقب المحاضرة بيان عملى يتم
فيه علاج مجموعة من الحالات
المتنوعة تحت اشراف

أ. د. يسرى الهوارى

استاذ العظام
أ. د. حازم محرم
استاذ الاشعة

وذلك يوم الاثنين الموافق ٩ نوفمبر فى
تمام الساعة العاشرة صباحا بقاعة
المحاضرات الكبرى بمستشفى القصر
العينى التعليمى الجديد (الفرنساوى)

Al-Ahram

6-11-1998

اجتماعات

شكر وتقدير

تتقدم اللجنة المنظمة للمؤتمر الدولي الثالث لعلوم الليزر وتطبيقاته والدورة التدريبية الدولية الاولى والتي عقدت بالتعاون مع

UNIDO, ICS

بتريسينا باسمى ايات الشكر والعرفان لكل من

السيد الأستاذ الدكتور

مفيد شهاب

وزير التعليم العالي والدولة والبحث العلمى

والسيد الأستاذ الدكتور

فاروق اسماعيل

رئيس جامعة القاهرة

وراعى المؤتمر على كل ما تفضلوا به من الدعم المستمر والذي بدونه كان من المستحيل نجاح المؤتمر والدورة وكذلك

PROF. G. DENARDO

المنسق العام بالمركز الدولي للعلوم والتكنولوجيا المقدمة بتريسينا على تشجيعه المستمر وتعاونه لنجاح الدورة كما تتقدم اللجنة بالشكر الوفير لأعضاء اللجنة العلمية واللجنة المنظمة لكل من المؤتمر والدورة ولكل اعضاء هيئة التدريس والعاملين بالمعهد على كل ما تفضلوا به من مجهود فائق كل تصور بروح عالية وعزيمة قوية والذي اثمر عن نجاح ملحوظ شهد به كل من حضر الدورة والمؤتمر وكان له الصدى الدولي السريع وكان للدور الكبير الذى قامت به

مؤسسة الاهرام من دعم مستمر ورعاية للمؤتمر اثره الاعلامى الكبير فى نجاح هذا النشاط العلمى الكبير الغير مسبوق

رئيس اللجنة المنظمة وكيل المعهد لشنون الدراسات العليا والبحوث

أ. د. يسر عز الدين جمال

رئيس المؤتمر عميد المعهد

أ. د. يحيى عبدالحميد بدر

شكر واجب

السيد اللواء هيب العادلى

وزير الداخلية

والسيد مساعد اول وزير الداخلية

اللواء يسرى امين

ومدير امن الاسكندرية

الهيئة العامة للمستشفيات

والمعاهد التعليمية

تحت رعاية

أ. د. رضا مصطفى

امين عام الهيئة

وأ. د. عبدالحميد اباطة

مدير مستشفى احمد ماهر التعليمى

يتشرف

أ. د. منير مورييس

رئيس مجلس اقسام جراحات

الاذن والانف والحنجرة

وأ. د. رافت عشم الله

رئيس قسم الاذن والانف والحنجرة بمستشفى احمد ماهر

بدعوة السادة الزملاء لحضور محاضرة يوم الاثنين ١١/٢٣ الساعة ١٠ صباحا بمستشفى

احمد ماهر وعنوانها

RECENT ADVANCES IN SYNOSCOPY

يلقيها أ. د. رضا كامل اسناد الاذن والانف بالقصر العيني ويعقب المحاضرة اجتماع مجلس الاقسام وحفل شاي

مستشفى الزمالك

شارع المحروسة احمد عراقى المهندسين تعلن عن افتتاح العيادات الخارجية للحجز والاستعلام تليفون

٣٤٧٠١٣١ / ٣٤٧٠٣٩٥

شكر وتقدير

أ. د. ليلي عبدالوهاب

تتقدم بالشكر لكل من السادة

أ. د. مفيد شهاب

وزير التعليم العالي والبحث العلمى

المستشار صبرى الببلى

محافظ القليوبية

أ. د. أحمد الشيخ

رئيس جامعة الزقازيق

وذلك للثقة الغالية بتعيينها عميدة معهد الخدمة الاجتماعية بينها

شركة السمالوطى الطبية

المدير العام والعاملون بجميع الأفرع

يهنئون

العالم الجليل الاستاذ الدكتور

رأفت حافظ بدوى

برئاسة

جمعية جراحة العظام المصرية

الجمعية التعاونية لبناء

مساكن التطبيقين بالإسماعيلية

تعلن الجمعية عن دعوة الاعضاء لحضور اجتماع الجمعية العمومية العادية يوم الثلاثاء الموافق

١٩٩٨/١٢/١٥ بمقر الجمعية بمبنى نقابة التطبيقين ش شين الكوم

بالاسماعيلية مناقشة جدول الاعمال المعلن بمقر الجمعية

رئيس الجمعية

حسن أحمد العيادى

المؤتمر المصرى الدولى

الثالث والعربى الاول

جراحة المناظير

فندق هيلتون النيل

٢٦-٢٣ نوفمبر ١٩٩٨

تحت رعاية سيادة الرئيس

محمد حسنى مبارك

رئيس الجمهورية

برنامج غذا الاثنين

Registration: 8.00 a.m.

opening ceremony: 9.30

state of the art lectures: 11.00

سكرتير الجمعية والمؤتمر

أ. د. محمد حقى

رئيس اللجنة العلمية

أ. د. حمدى عبدالله

رئيس الجمعية والمؤتمر

أ. د. محيى حماد

تنظيم مؤسسة الفاميديكال العلمية

ت: ٤٥٣٢٩١٦ - ٤٥٣٢٩١٧

الإدارة العامة للاستيراد

والتصدير بجريدة الاهرام

تهنئ الأستاذ

أبو العلا السيد

بترقيته نائبا للمدير العام

الاستيراد بالبنك الاهلى المصرى -

الفرع الرئيسى

دعوة الى الاساتذة والاطباء فى

جميع التخصصات

يسر شركة كليوباترا فارما

للاجهزة والمعدات والمستلزمات

الطبية واجهزة الاشعة (د . احمد

ابوالفضل وشركاه) بدعوة

سيادتكم لحضور افتتاح فرع

ومعرض الشركة الجديد

بالاسكندرية ٣٣ شارع الزهراء

عمارات التعاونيات سموحة

وذلك يوم الاثنين الموافق

١٩٩٨/١١/٢٣ فى تمام الساعة

الرابعة بعد الظهر

والله ولى التوفيق

كلية التربية جامعة الزقازيق

اعضاء هيئة التدريس بقسم علم

النفس التربوى يهنئون الاستاذ

الدكتور

محمد المرى اسماعيل

بتعيينه عميدا لكلية التربية النوعية

داعين الله لسيادته بدوام البرقى

تعلن جمعية الطلائع للاسكان

التعاونى عن عقد الجمعية

العمومية يوم الاربعاء الموافق

١٩٩٨/١٢/٢٣ وذلك الساعة

السادسة مساء بنادى النصر

لضباط القوات المسلحة بمدينة

نصر للنظر فى جدول الاعمال

المعلن بمقر الجمعية

مجلس الإدارة

الذى ظهر
بل بمثابة
ان المصرى
ن يكون لنا
طمرحنا لا
وز بالكاس
ة من ممطلى
ى فى نظرى
عادة قوامها

اضية



USMA
الرئيسية
الاشارة
١٩٩٧



حجوزة
ساعة
٣٤٧٠

وته

رح الله

ياب

رضا

كى



APPLICATION FORM

visit our site on <http://www.ics.nile.eg> for the latest update on ICS activities

A copy of the completed Application Form should be sent by FAX to: **PROF. Y.E.E. GAMAL**
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: 4202-572949/571895

A photocopy of the data should be attached here, signed legibly on the reverse

Each question must be answered clearly and completely. Type or print in black ink.
If more space is required, attach additional pages

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:

SURNAME: **DIOMANDE** First name: **KEDRO** Middle name(s): **SIBIKI** Maiden name (for women):

Place of birth: (city and country) **Bouake (Cote d'Ivoire)** Present nationality: **Ivorian** Date of birth: (day - month - year) **25-08-1979**

Male Female

Marital status:

Home address:

City: **Bouaké**

Country: **Cote d'Ivoire**

Post code: **178**

E-mail: **diomandes@**

Name and address of person to notify in case of emergency

NAME: **Mme Diomande Helene** Relationship: **WIFE**

Address: **BP 178 Posingville**

Tel. no.: **225-06573440360**
25-259

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degree
Université Paris-Sud ORSAY - France	FRANCE	Laser Physics	1984-1988	PH.D.

Subject of specialization:

What is your mother tongue of

French

Knowledge of English:

	Excellent	Good	Average
Speak:		X	
Read:		X	
Write:		X	

What other languages are you proficient in?

French

INSTITUTION

Name and full address of permanent institution

UFR/SSMT
Laboratoire de Cristallographie et Spectro.

Tel. no: 225-44 6677

Country:

Cote d'Ivoire

Post code:

42582

Tel. no: 221-293620

Field of activity of your institution or organization

and Address of the High Educational Director

Describe your present work in your institution, particularly its contribution to your organization or institution and give a brief account of your work, its highlights, your present specific research

... your present specific research...

PREVIOUS EMPLOYMENT AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
Université de Cote d'Ivoire	1989 - 1998	Professor of physics and Laser physics	...

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken

LASER induced fluorescence for green plants

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS

(specify the number of your publications inc. books, articles and give the title of most of your most recent papers (relevant to the subject of this particular activity) as well as the precise references.

- Preprint (ICCP).
LASER induced fluorescence for potassium deficiency of Parkia oil tree (1998)
- Characterization of Coal Pitches by the Transport Properties
Normament. (ICCP, internal report) 1997
- Phase conjugation of broad-band laser pulses in BaTiO3
(Journal of Nonlinear Optics, 1998, vol 45, nos pp 5-2)

Please specify your responses in the appropriate boxes.

CONVENTIONS, COURSES, SEMINARS AND SCIENTIFIC VISITS

Name and place: *1st & 10 last valley in upper Trente (SCTP) 1998*

Have you participated in ICS activities in the past? Yes No

If yes, which? *1997 around its completion (Trentino)*

Explain your reasons for wishing to participate in ICS activities and how you will finance your participation.

REFERENCES:

ICS requires the name and address of three referees in support of your application.

Name	Position held	Address
1. <i>Professor G. DE TRAZIO</i>	<i>ICS member</i>	<i>Trento, Italy</i>
2.		
3.		

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that might result in the termination of my arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, its local organization and the host country shall not be held liable for compensation in the event of injury, death, injury or illness during my participation in the activity.

[Signature]
Signature of candidate

15-09-98
Date



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

- A copy of the completed Application Form : ICS-UNIDO SECRETARIAT
should be sent to: AREA SCIENCE PARK, BUILDING L2, PADRICIANO 99
(The original should be sent by mail) 34012 TRIESTE, ITALY
TEL: +39-40-9228-111
FAX: +39-40-9228-107 (ENVIRONMENT) - 9228-115 (CHEMISTRY) - 9228-122 (HIGHTECH & NEW MATERIALS)

- Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

ACTIVITIES

Which activity are you applying for?

- Workshop
 Training; Course

Please specify title of activity:
Training course on laser (Egypt 09-21 Nov 98)

SURNAME: First name: Middle name(s): Maiden name (for women):

BOURAI

Kamel

Place of birth: (city and country)

BOUMERDES

Present nationality:

ALGERIA

ALGERIAN

Date of birth: (day - month - year)

01 - 12 - 1965

Male Female

Marital status: Single.

Home address:

03, Rue Ali Betrouni Bainem

Tel. no.: 213 2 95 91 15

Fax no.: 213 2 95 85 36

City: Algiers

Country: Algeria

Post code: 16060

E-mail: kbouai @ caremail.com

Name and address of person to notify in case of emergency

Name: BOURAI Omar

Relationship: Father

Tel. no.: 213 2 95 91 15

Address: 03, Rue Ali Betrouni Bainem 16060 Algiers

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
USTHB / Setif University	Algiers Setif	Mechanics of Precision and Optics	84 - 88	Engineer

Subject of specialization: Technical Optics

LANGUAGES

(As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? *Arabic*

Knowledge of English:

	Excellent	Good	Average
Speak:		X	
Read:		X	
Write:		X	

What other languages are you proficient in? *French*

INSTITUTION

Name and full address of permanent institution:

*C.D.T.A. Laser Laboratory
128, Chemin Mohamed Gacem
B.P. 245 El-Madania*

City: *Algiers*

Country: *Algeria*

Post code: *16000*

Tel. no.: *213. 2. 27. 68 68*

Telefax: *213 2 27 59 37*

Telex:

E-mail:

Field of activity of your institute or organization: *Research and Development Development*

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area. *Our laboratory belong to the ionized media department. I work with the laser Gas lasers Group as an engineer. We developpe gas lasers and Applications. My tasks consiste to the conception and realisation of Optical and Mechanical Systems.*

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
<i>C.D.T.A</i>	<i>Engineer June 92 till now</i>	<i>Gas Lasers</i>	<i>Developpement of gas lasers and Applications.</i>

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken: *- Design and Construction of a Nitrogen laser
- Design and Construction of a CO₂ laser*

Awards/scholarships: *- Design and Construction of a Copper Vapour Laser (CVL)*

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

National Association of Physics (membership).

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

- International Conference on Plasma Physics and Plasma technology Minsk, Belarus Sep 97
- XXIII International conference on Phenomena in Ionized Gases, Toulouse, France July 97
- The Sixth European Conference on Atomic and Molecular Physics Siena Italy July 98

Have you participated in ICS activities in the past? Yes No

If yes, which? Training Courses on Laser and Application in industry, Medicine and Environment
Tunis Tunisia 10-22 Nov 97

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

I wish to participate in order to improve my knowledge in this field. Specialty in the application of lasers in Industry. I hope to meet scientific people and change ideas. About Contribution I expect to bring my experience in design and construct of gas lasers, particularly Optical and Mechanical systems.

REFERENCES:

ICS requires the name and address of three referees in support of your application

Name	Position held	Address
1. Bessa'ah hamid	Director of C.D.T.A	128, Chemin Mohamed Gacem Algiers
2. Khelfaoui hamid	Head of Laboratory	128, Chemin Mohamed Gacem Algiers
3. Mousselmel Mousa	Researcher	Chemistry department Univ of Me P.O Box 6128 Station Downtown. CAN

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.


am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

BOURAI KAMEL

Signature of candidate



Date 22.09.98



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS

A copy of the completed Application Form should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571898



- Each question must be answered clearly and completely. Type or print in black ink.
- If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:

3rd International
Conference on Lasers and
Applications: Advances in ...

SURNAME: GASMI First name: TAIEB Middle name(s): Maiden name (for women):

Place of birth: (city and country) SETIF - ALGERIA Present nationality: ALGERIAN Date of birth: (day - month - year) 01. 01. 1957

Male Female Marital status:

Home address: Los artistas, n° 10, 1A

City: MADRID 28020

Country: SPAIN Post code: 28020

Tel no.: (34 91) 3943275
Fax no.: (34 91) 3943279

E-mail: gasmi@eucmax.sim.ucm.es

Name and address of person to notify in case of emergency

Name: Fairouz Gasmi Relationship: Wife
Address: 10 Calle los artistas, 1A
MADRID 28020 - SPAIN

Tel. no.: (34 91) 3943275

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
PHD MANCHESTER + OXFORD	England	Laser physics	1987	PHD

Subject of specialization: Laser Spectroscopy

JES (As most of the courses are conducted in English, proficiency in English language)

is your mother tongue? Arabic

Knowledge of English:

	Excellent	Good	Average
Speak:	/		
Read:	/		
Write:	/		

What other languages are you proficient in? French, Spanish

INSTITUTION

Name and full address of permanent institution:

Unidad de láseres y haces moleculares
 Instituto Pluridisciplinar
 Universidad Complutense de Madrid
 City: MADRID
 Country: SPAIN Post code: 28020

Tel. no. (34 91) 3943275
 Telefax (-) 3943279
 Telex:
 E-mail: gasmi@eucaax.dim.ucm.es

Field of activity of your institute or organization: Research (multidisciplinary)

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

I am in charge of the "project" laser remote sensing for urban pollution monitoring in Madrid.

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
C.D.T.A (Algiers)	Senior Scientist	laser	Head of a group: "Solid State laser technology"

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Laser remote sensing (LIDAR) for pollution monitoring

Awards/scholarships:

FEC (Europe) + local government of Madrid

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 3 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

- Cleo 98 - Glasgow : 14 - 18 September 1998
- Measurement Science and Technology : Sept. 1998
- International Conference on New Trends in Laser Spectroscopy: 26 - 30 - June 1997 - MADRID 1997.

SHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Specify your function and activity in such organization(s)

- local coordinator for Algeria in the LAM network (AFRICA)
- Associate to ICTP (TRIESTE)
- S and T policy making in AFRICA - UNESCO - IIAIAP (IOWA UNIVERSITY)

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

Have you participated in ICS activities in the past?

Yes

No

If yes, which?

Expert meeting on Combustion, June 1998 (TRIESTE)

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

This conference has a high ~~level~~ scientific level. The chosen topics are excellent. I am also contributing by a paper "lidar-Dial for pollution monitoring".

REFERENCES:

I require the name and address of three referees in support of your application

Name

Position held

Address

1. Prof. G. DENARDO

ICS coordinator

ICS - TRIESTE

2. Prof. Y. GAWAL

Niles vice-dean

Niles - Egypt.

3.

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for:

Partial travel

Full travel

Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Signature of candidate

Date

Subject of specialization:

Laser Spectroscopy

Name: TAIEB GASMI

Affiliation: Doct, Unidad de Láseres, Instituto

Address: Pluridisciplinar, Univ. Complutense, MADRID

Tel (34 91) 3943275 Fax (34 91) 3943279 E-Mail gasmi@eucmax.

Suggested contribution: Attendance Paper
 Poster Workshop

pim.uem.es

Name of Spouse (if any): Fairoze medjahed GASMI

Do you wish accommodation arrangements through the conference?

Yes (Number of Nights required: 5) No



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form : ICS-UNIDO SECRETARIAT
should be sent to: AREA SCIENCE PARK, BUILDING L2, PADRICIANO 99
(The original should be sent by mail) 34012 TRIESTE, ITALY
TEL: +39-0-9228-111
FAX: +39-0-9228-107 (ENVIRONMENT) - 9228-115 (CHEMISTRY) - 9228-122 (HIGHTECH & NEW MATERIALS)

- Each question must be answered clearly and completely. Type or print in black ink.
- If more space is required, attach additional pages.

ACTIVITIES

Which activity are you applying for?

- Workshop
 Training Course

Please specify title of activity:

Training Course on Lasers - EGYPT
9-21 Nov 1998

SURNAME: HILOUL First name: MOHAMED Middle name(s): LARBI Maiden name (for women):
Place of birth: (city and country) Constantine - ALGERIA Present nationality: ALGERIAN Date of birth: (day - month - year) 07-01-1967

Male Female Marital status: Married

Home address: cité des 150 Logements BT 13 n° 4 Rouiba

Tel. no.: 913-2-85-63-24
Fax no.:

City: ALGIERS

Country: ALGERIA

Post code: 16000

E-mail: MLHILOUL@CARAMAIL.COM

Name and address of person to notify in case of emergency

Name: BETINA Relationship: UNCLE
Address: CITE DU 2 MAI 1945 BT 15A N° 14
B9B ENDOUAR - ALGIERS ALGERIA

Tel. no.: 013-2-51-74-37

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
U.S.T.H.B	ALGIERS	PHYSICS	1984-1988	B.Sc
C.D.T.A	ALGIERS	Laser Technology	1988-1995	MAGISTER

Subject of specialization: LASER SPECTROSCOPY

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? **ARABIC**

Knowledge of English:

	Excellent	Good	Average
Speak:		X	
Read:		X	
Write:		X	

What other languages are you proficient in? **FRENCH**

INSTITUTION

Name and full address of permanent institution:

**C.DTA / LABORATOIRE DES LASERS
128 CHEMIN MOHAMED GACEM
BP 245 EL-MADANIA**

Tel. no.: **213-2-27-68-68**

Telefax: **213-2-27-53-37**

or **213-2-27-93-93**

Telex: **/**

City: **ALGIERS**

E-mail: **/**

Country: **ALGERIA**

Post code: **16000**

Field of activity of your institute or organization: **RESEARCH AND DEVELOPMENT**

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area. **Our department called "Ionized media" is divided in 2 laboratories: Laser Laboratory, plasma and fusion laboratory. I work in a team of the laser laboratory as a researcher, my tasks consists of studying of highly excited states of barium atom in an electric field.**

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
C.DTA	Researcher Oct 1995 - till Now	Laser Spectroscopy	Experimental Studies on barium atom using laser sources.

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken: **Photoionization spectra of barium atom.**

Awards/scholarships: **/**

Projects/patents: **/**

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

ALGERIAN ASSOCIATION OF PHYSICS - MEMBERSHIP

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

- | Name and places | Year |
|--|-------------------|
| - First South-North International Workshop on Fusion theory - Tipaza | ALGERIA Sept 1990 |
| - National congress of Physics CNPAS6 SETIF - ALGERIA | Dec 1996 |
| - 6th European Conference on Atomic and Molecular Physics | July 1998 |

Have you participated in ICS activities in the past? Yes No

If yes, which? Training Course on Lasers and applications LAINEI Tunis - TUNISIA 10-22 Nov 98

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

I wish to participate in order to exchange scientific knowledge and new ideas with scientists from all over the world in the field of Lasers (especially in Laser spectroscopy). I can bring my experiment that I have had during these last three years working on Laser spectroscopy and atomic physics.

REFERENCES:

ICS requires the name and address of three referees in support of your application

Name	Position held	Address
1. BESSALAH HAMID	DIRECTOR	- CDTA, 123 Chemin Mohamed Gacem BP245 EL-MADANIA ALGERIA ALGERIA
2. MOUSSELMAL MOUSSA	RESEARCHER	- CHEMISTRY DEPARTMENT, University of Montreal PO BOX 6128, Station Downtown, Montreal, Quebec CANA
3. KHELFAOUI HAMID	HEAD OF LABORATORY	- CDTA, 123 Chemin Mohamed Gacem BPS EL-Madania ALGERIA ALGERIA

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

HIOUL MOHAMED LARBI
Signature of candidate

Sept, 22nd 1998
Date



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form: ICS-UNIDO SECRETARIAT
should be sent to: AREA SCIENCE PARK, BUILDING I2, PADRICIANO 99
(The original should be sent by mail) 34012 TRIESTE, ITALY
TEL: +39-41-9228-111
FAX: +39-41-9228-107 (ENVIRONMENT) - 9228-115 (CHEMISTRY) - 9228-122 (HIGHTECH & NEW MATERIALS)

- Each question must be answered clearly and completely. Type or print in black ink.
- If more space is required, attach additional pages.

ACTIVITIES

Which activity are you applying for?

- Workshop
- Training Course

Please specify title of activity:

TRAINING COURSE ON LASERS
(EGYPT 9-21 NOV 1998)

SURNAMI: MOUSSAOUI First name: NOURRODINE Middle name(s): / Maiden name (for women): /

Place of birth: (city and country) SOUK AHRAS - ALGERIA Present nationality: ALGERIAN Date of birth: (day - month - year) 24 MARCH 1965

Male Female Marital status: MARRIED

Home address: CITE DES 150 LOGEMENTS B213
NE4 ROUIBA Tel. no.: (213) 2.85.63.24
City: ALGIERS Fax no.: (213) 2.85.45.84
Country: ALGERIA Post code: 16000 E-mail: BOUALLAG@EST.CERIST.DZ

Name and address of person to notify in case of emergency

Name: AZOU MUSTAPHA Relationship: COUSIN Tel. no.: (213) 2.61.14.54
Address: 10 RUE TAHMOUD BOUHAMDI ALGIERS ALGERIA

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
U.S.T.H.B.	ALGIERS	PHYSICS	1988-1994	MAESTER
U.S.T.H.B. University of sciences and TECHNOLOGY HOUARI BOUMEDIENE	ALGIERS	PHYSICS	1984-1988	BSC

Subject of specialization: QUANTUM ELECTRONICS

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? **ARABIC**

Knowledge of English:

	Excellent	Good	Average
Speak:		X	
Read:		X	
Write:		X	

What other languages are you proficient in? **FRENCH**

INSTITUTION

Name and full address of permanent institution:

**U.S.T.H.B. BP N° 32 EL ALIA
INSTITUT DE PHYSIQUE**

Tel. no.: (213) 8-51-55-75

Telufax: (213) 8-51-53-88

Telex: -

E-mail: -

City: **ALGAIERS**

Country: **ALGERIA**

Post code: **16000**

Field of activity of your institute or organization: **EDUCATION AND RESEARCH**

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area **I AM PROFESSOR IN PHYSICS AT THE UNIVERSITY OF SCIENCES AND TECHNOLOGY HOUARI BOUMEDIENE (ALGAIERS), AND I AM CARRYING A RESEARCH WORK IN LASER SPECTROSCOPY (PART OF THE ALGERIAN PROGRAM IN LASER PHYSICS).**

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
U.S.T.H.B.	PROFESSOR / RESEARCHER 1988 - NOW	PHYSICS (LASER SPECTROSCOPY)	PROFESSOR IN CHARGE OF COURSE: "MAGNETISM AND ELECTRICITY 1988 - 1994 "ATOMIC PHYSICS" 1994 - 1996 "EXPERIMENTAL TECHNIQUES 1996 - NOW

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken: **PHOTOIONIZATION SPECTRUM OF ALKALI ATOMS
IN PRESENCE OF ELECTRIC FIELD.**

Awards/scholarships: -

Projects/patents: -

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

ALGERIAN ASSOCIATION OF PHYSICS
MEMBERSHIP

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

SIXTH CONFERENCE ON ATOMIC AND MOLECULAR
PHYSICS (CCAMP VI), SIENA, ITALY

Year

1998

Have you participated in ICS activities in the past?

Yes

No

If yes, which?

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

I AM PLANNING TO ATTEND THIS COURSE IN ORDER TO IMPROVE
MY BACKGROUND IN LASER SPECTROSCOPY. I WOULD ALSO HAVE THE
OPPORTUNITY TO MEET HIGHLY QUALIFIED SCIENTISTS AND EXCHANGE IDEAS,
AND TO EXPLAIN THE ALGERIAN PROGRAM IN LASER AND ITS APPLICATIONS.

REFERENCES:

ICS requires the name and address of three referees in support of your application

Name	Position held	Address
1. BENOJADALLAH NOUREDDINE	PROFESSOR	INSTITUT DE PHYSIQUE U.S.T.H.B.
2. TALBO ABDELOUAFAB	PROFESSOR	" " "
3. T.E. ABDELATIF	RESEARCHER	C.R.A.A.G ALGERIA, ALGERIA

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Mr. N. TOUSSAOUF
Signature of candidate

22-SEP-1998
Date

**UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
AREA SCIENCE PARK, PADRICIUNO 99, 34012 TRIESTE (ITALY)**

APPLICATION FORM

visit our site on <http://WWW.ics.trieste.it> for the latest update on
A copy of the completed application form : prof. Y.E.E GAMAL
should be sent by FAX to : VICE DEAN
(The original should be sent by mail) N.L.L.E.S. CAIRO UNIVERSITY
GIZA, EGYPT
FAX :+202-5729-499/571898



-Each question must be answered clearly and completely .Type or print in black ink
- If more space is required , attach additional pages .

SCIENTIFIC ACTIVITIES

Which training activity are you applying for ?

- Work shop
- Training Course
- Study Tour

please specify title of activity :
Internatinal Workshop in Laser

SURNAME : First name : Middle (s): Malden name (for women)
AL-TAK. ANMAR Mudhaffar

place of birth : (city and country) present nationality: Date of birth : (day -month -year)

Mosul - Iraq Iraqi 12/2/1951

Male Female Marital status: Married

Home address :
University of Mosul

Tel.no.: Mosul Iraq
810733
Fax no.:

City : Mosul
Country : Iraq

Telex.: 298011 MUNPRS/IK
E-mail:

post code :

Name and address of person to notify in case of emergency

Name : M.AL-Tak Relation ship : Brother

Tel.no.:
105506243250

Address: United Arab Emirate

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	period	Degrees
Mosul	Iraq	Medicine and Surgery	1968 - 1974	M.B.ch.B
Royal College of Surgeons	Ireland	Ophthalmology	1985 - 1987	D. O.R.C.S
Royal College ophthal .	England	Ophthalmology	1989	M.R.C.Ophth
Royal College Surgeos	Edinburgh	Ophthalmology	1985-1989	F. R.C.S.

Subject of specialization:
Ophthalmology

MEMBERSHIP IN SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

pleas specify your function and activity in such organization (s)

- Member of General medical council U.K .
- Member of Iraqi Medical Association .
- Member of Iraqi Ophthalmologist Association.

CONVENTIONS, CONFERENCES , SEMINARS AND SCIENTIFIC VISITS

- Name and places year
- 1- IRAQI CANCER ASSOCIATION Yearly Conference .
 - 2- IRAQI OPHTHALMIC ASSOCIATION Yearly conf .

Have you participated in ICS activites in the past ? YES NO

if yes ,which?

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

To update Knowlege on Various applications of Laser.

REFERENCES:

if equires the name and address of three referees in support of your application

Name	position held	address
1. Dr.J. Shareef	Dean Medical College	Medical College Mosul Iraq
2.Mr. S A Rahman	Head Dept. Surjeul	Medical College Mosul Iraq
3. Mr. Z. Habal	Profes Dept. Surjeul	Medical College Mosul Iraq

APPLICABLE ONLY FOR CANDIDATES REQUESTING FOUUD FROM ICS/ UNIDO

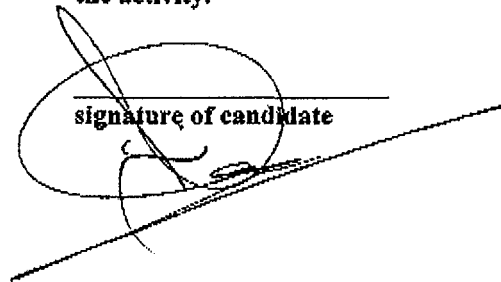
Important : Travel and per diem grants can be available for the limited number of participats for the planned activitics Ellorts should be made by individuals to raise funds from local sources to cover travel and living expenses

I am requesting financial support from ics for: partial travel full travel living allowance

I certify that the statements made by me above are true and complete . if accepted I undertake to refrain from engaging in any political or activities that whould reflect unfavorahy on the international status of ics . I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity .

I understand that UNIDO-ICS the local organization and the host country shall not be held laible for compensation in the event of my death , injury or illness during my trip and participation in the activity.

signature of candidate



22 . 9 . 98
Date

04/05 '98 MON 13:54 FAX 30 40 9228122

ICS UNIDO

000



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.I.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571898

A recent photograph of the candidate should be attached here, signed legibly on the reverse

— Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:

Laser + Molec. phys.

SURNAME: Abbas Mohammed Ali First name: Middle name(s): Maiden name (for women):

Baghdad Iraq Place of birth: (city and country) Present nationality: Date of birth: (day - month - year) 5.8.1938

Male Female Marital status:

Home address: Mustan Siriya University Tel. no.: 416 8491 Fax no.:

City: Baghdad Post code: E-mail: Country: Iraq

Name and address of person to notify in case of emergency

Name: Tarek, Abu Rena Relationship: Cousin Tel. no.: 77 25269

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
University of Heidelberg	Heidelberg W-Germany	IR - Laser	Doktor 63 Diplom 53	M.Sc. PHD

Subject of specialization:

4/05 '98 MON 13:55 FAX 39 40 9228122

ICS UNIDO

005

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? Arabic

Knowledge of English:

	Excellent	Good	Average
Speak:			✓
Read:			✓
Write:			✓

What other languages are you proficient in? German (Excellent)

INSTITUTION

Name and full address of permanent institution:

Coll. of Sc., Mustansiriyah University

Tel. no.: 4168491

Telefax:

Telex:

E-mail:

City: Bagdad

Country: Iraq

Post code: Mustansiriyah Uni.

Field of activity of your institute or organization: Molecular phys. IR -

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Lecturer of Molec. Las

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

- IR - Mol. Continuum absorption
- Fermi-Resonance
- Laser-Beam Reflection
- Nd-Yag-Laser 2
- CO₂-Power
- Absorption of Blood by Laser

005 '98 WIN 13:55 FAX 39 40 0228172

ICS UNIDO

0008

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

DPG, Deutsche Physik. Gesell

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Conference: Molecular phy
W. Germany

Year

Have you participated in ICS activities in the past?
If yes, which?

Yes No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

REFERENCES:

IC requires the name and address of three referees in support of your application

Name	Position held	Address
1. Prof. P. Hess		
2. Prof. H. Wolff		University of Heidelberg
3. Prof. Schramm		W-Germany (FRG)

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Dr. M. Abbas

Signature of candidate

18.9.1998

Date

04/05 '98 MON 13:54 FAX 30 49 0228122

ICS UNIDO



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form:
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.U.E. GAMAL
VICE DEAN
N.I.E.S. - CAIRO UNIVERSITY
CITTA' LOWIT
FAX: +202-5729-9975/71898



Each question must be answered clearly and completely. Type or print in black ink.
If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:

Training course on Laser science and
Nov. 9-21, 1998, Cairo Univ, Egypt

SURNAME: **YOUSIF** First name: **ESAM** Middle name(s): **GEORGE** Maiden name (for women):

Place of birth (city and country): **Baghdad - Iraq** Present nationality: **Iraqi** Date of birth (day - month - year): **16-7-1951**

Male Female Marital status: **Married**

Home address: City: **Baghdad** Country: **Iraq** Post code: **HAY AL-WIHDH 902 114/96**

Tel. no.: Fax no.: E-mail:

Name and address of person to notify in case of emergency:
Name: **Rabab T. Abdul** Relationship: **Wife** Tel. no.: **7198759**

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
Birmingham Univ.	U. K	Mech. Eng. Laser App.	1976-1980	Ph. D.
Birmingham Univ	U. K	Mech. Eng. Thermo	1975-1976	M. Sc.
Baghdad Univ	Iraq	Physics	1967-1971	B. Sc.

Subject of specialization: **Mechanical application of laser beam.**

4/05 '08 MON 13:55 FAX 30 40 9228122

ICS UNIDO

0008

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? **Arabic**

Knowledge of English:

	Excellent	Good	Average
Speak:	✓		
Read:	✓		
Write:	✓		

What other languages are you proficient in? **Non**

INSTITUTION

Name and full address of permanent institution:

Institute of Laser & Plasma for Postgraduate Studies.

Tel. no.:

Telefax:

Telex:

City: **Baghdad**

Country: **Iraq**

Post code:

Baghdad Univ. Jadiriiah - P.O. Box 47314 Baghdad - Iraq

E-mail:

Field of activity of your institute or organization:

Academic studies & Research work in the field of Laser.

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Head of Plasma Department, Lecturer of Laser Applications

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
Baghdad Univ	Head of Plasma Dep.	R&D work in the field of laser	Lecturing & Supervision

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Supervising postgraduate students in the field of laser app

Awards/scholarships:

Non

Projects/patents:

Non

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

15 - Publication, 1 - book

(Listed on a separated page)

17 DE '98 MON 13:55 FAX 39 60 9228122

ICS UNIDO

008

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

Iraqi Society of Math. and Phys.

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

Poland, Warsaw Univ, Seminars and Scientific visits 1990
Italy, Piza Seminars 1998

Have you participated in ICS activities in the past?
If yes, which?

Yes No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

To get ~~more~~ and recent knowledge in the field of laser applications
I will contribute in seminar and discussions mainly in the field
of industrial applications of laser.

REFERENCES:

It requires the name and address of three referees in support of your application

Name

Position held

Address

1. Prof. Dr S. A. KANDLA Prof. of Phys. Saddam University
College of Science, Phys. Dep.
2. Prof. Dr. A. M. TALIB Prof. of Phys. Baghdad Univ
College of Science, Phys. Dep.
- 3.

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

E. Sa
Signature of candidate

14-9-1998
Date



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form:
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.J.E. GAMAL
VICE DEAN
N.I.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729199/571898

A recent photograph
of the candidate
should be
attached here,
signed legibly
on the reverse

--- Each question must be answered clearly and completely. Type or print in black ink
--- If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
 Training Course
 Study Tour

Please specify title of activity:

Laser Applications in
communications

SURNAME: First name: Middle name(s): Maiden name (for women):

El-Jaafreh

Yusef

Ghazi

Place of birth: (city and country) Present nationality: Date of birth: (day - month - year)

Ramallah/ Jordan

Jordanian

9 / 8 / 1951

Male Female Marital status:

Home address:

Dean, Engineering Faculty
Mu'tah University

Tel. no. ++962 6 4617860

Fax no. ++962 6 4654061

City: Karak

Country: Jordan

Post code:

E-mail:

Jaafreh @ Center
Mutah. edu. Jo.

Name and address of person to notify in case of emergency

Name:

Relationship:

Tel. no.:

Address:

Mrs. El-Jaafreh

wife

++ 962 6 370996

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
Royal College	England	Communications	5 y's	BSC
Wales University	UK	Communications	2 y's	MSC
Wales University	UK	Communications	3 y's	PhD

Subject of specialization:

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate speaking knowledge of that language)

What is your mother tongue?

Knowledge of English:

	Excellent	Good	Average
Speaks:	/		
Reads:	/		
Writes:	/		

What other languages are you proficient in?

INSTITUTION

Name and full address of permanent Institution:

Tel. no.:

**Engineering Faculty
Mu'tah University**

Telefax:

City: **Karak**

E-mail: **Jaafreh @ Center Mu'tah**

Country: **Jordan**

Post code:

edu. jo

Field of activity of your institute or organization:

Education and Research

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Please see attached Brief Biography

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (not five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
Mu'tah University	Dean, Engineering Faculty	education	see attach brief Biography
	Director, maintenance	maintenance	
	Director, consultation center and community services		

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Awards/scholarships: **Several undergraduate BSC**

Projects/patents: **Students Final Years**

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

Please see attached list

Publication lists

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in each organization(s)

IEE
C Eng
JIEA

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Dates and places

Year

see enclosed CV.

Have you participated in ICS activities in the past?
If yes, which?

Yes No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

to attain new Knowledge and up date Information in this Important field of communication

REFERENCES

Please specify the name and address of three referees in support of your application

Name	Position held	Address
1. Prof. Aldhalat	University president	Mutah University
2. Prof. Alhunaity	University vice president	Mutah University
3. Prof. Alkateeb	University vice president	Mutah University

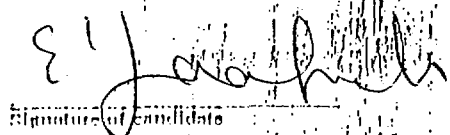
APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or religious activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO/ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.



Signature of Candidate

8/9/1998

Date

Ref :

Date :

الرقم :

التاريخ : هـ

الموافق : م



Yousef Ghazi El-jaafreh, Dr. , CEng. MIEE, MIEEE. Born in Jordan, 1951. He received the BSc degree in Electrical Engineering (Telecommunication Systems Engineering) from the Royal College, England in 1977. Then joined Royal Signals until 1979 and worked on VHF/ UHF Land Mobile Radio communication systems. From 1980 to 1985 he joined the Royal Jordanian Air Force and worked on radar, control, communications and advanced air defense systems. He received the MSc degree in 1986 and the PhD degree in 1990 both in Electrical Engineering from the University of Wales, UK. After graduation he joined the Engineering faculty at Mu'tah University, Jordan, then the Dean of the faculty. As well as member of a member of Amman Applied Engineering University College Council. Chairman of the first national Jordanian conference on Electrical Engineering 1994. Later Director General of the Consultations, continuing education and community Services Center, also a member of the editorial board of Mu'tah Journal / natural and applied Science series. Since Oct. 1995 is on the Board of Directors of the Telecommunication Regulation Commission in Jordan. Now, member, national steering committee for privatizing Telecommunications sectors, namely; Radio Paging, Radio Trunking, Public Pay-phones and Cellular GSM services. Recently, member of the national steering committee for industrial development in the Southern region , Hashemite Kingdom of Jordan. His main research activities are in the areas of mobile radio communications and computer communication networks. Now is a professor with Electrical Engineering Department lecturing on Telecommunications Systems Engineering.

MU'TAH - KARAK - JORDAN

TEL. : 372380-99 / 617860-64

617890-94

P.O.Box : (7) Fax : (962 - 6) 654061

مؤتة - الكرك - الأردن

تلفون : ٩٩ - ٣٧٢٣٨٠ / ٦٤ - ٦١٧٨٦٠

٩٤ - ٦١٧٨٩٠

ص.ب : (٧) فاكس : ٦٥٤٠٦١ (٦-٩٦٢)

Curriculum Vitae

Name Dr Yousef Ghazi El-jaafreh;(Associate Professor), PhD,MSc,BSc,CEng.
Birth 1951
Address Electrical Engineering Dept.,
Engineering Faculty,
Mutah University,
JORDAN
Phone 06-617860 Ext. 5736 Office
Ext. 4443 Home
Email jaafreh@center.mutah.edu.jo

EDUCATION

PhD	Electrical Engineering / Telecommunications	UK	1990
MSC	Electrical Engineering / Telecommunications	UK	1987
Hdip	Operation Research and System Analysis	USA	1980
BSc	Electrical Engineering / Telecommunications	UK	1978

SPECIALIZATION

Telecommunications Systems Engineering

ACADEMIC EXPERIENCE

- Dean of Engineering Faculty, Mutah University, 1992,1993,1994.
- Conference Chairman,1st. National Jordanian Conference on Electrical Engineering, Mutah University, 1993.
- Assistant Professor then Associate Prof. Electrical Eng. Dept., Mutah Uni.
- Teaching undergraduate courses in Telecommunications, Communication1, Communication 2, Digital Communications, Electronic Communications Systems, Data Communications, Electronics III, Electric Circuit analysis I, Electric Circuit analysis II, Electrical Engineering, and others.
- Development of undergraduate curricular ,namely, analog and digital Communication Laboratories.
- supervision of undergraduate projects; generation and detection of digital communications modulations techniques FSK,PSK,QPSK,DQPSK, FFSK, Tone calibrated techniques, performance of digital communications systems operating in a noisy environment by measuring its BER, military

communications, namely, direct sequence spread spectrum, frequency hopping, infra red communications technology, etc.

- Academic advisor for final year students/Telecommunications for the years 1991/1992/1993/1994/1995/1996/1997/1998.

PRACTICAL EXPERIENCE

1. Royal Signals/Jordan Armed Forces (1978 ~ 1980)

Field engineer for the following VHF/ UHF land Mobile Radio Communications systems;

- Special Royal Guard Land Mobile Radio Communications Systems.
- Chief-in-Commander Land Mobile Radio Communications Systems.
- Military Security Land Mobile Radio Communications Systems.
- Royal Military Police Land Mobile Radio Communications Systems.
- Amman Airport security Communications Systems.
- Maintenance engineer GHQ/ EPABX.

2. Royal Jordanian Air Force (1980~1985)

- Commander, Theater readiness monitoring facility/Improved HAWK Surface-to-Air missile system.
- Radar & Communications staff officer.
- Commander ; HAWK missile system logistic center.

3. Mutah University (1989~

- Dean / Engineering Faculty.
- Director / The Consultation center, continuing education and local community services.
- Director / Maintenance Department.

4. Al al-Bayt University

Chairman / Telecommunications committee

Responsibility includes, design planning, development and supervision of the University on/of camps Telecommunications systems, EPABX, LAN.

5. Board of Directors/ Telecommunications Regulatory Commission in the Hashemite Kingdom of Jordan since Oct.1995.

6. Member, national special steering committee for privatizing Telecommunications sector in Jordan, namely; Radio Paging, Public Access Mobile Radio (Trunking), Public Pay-phones, and Cellular (GSM).
7. Member, national special steering committee for industrial development in the Southern region of the Hashemite Kingdom of Jordan.
8. Member, special committee for the accreditation /Electrical and Electronic Engineering BSc degree program in the following Private Universities; Al-Isra /1995, Amman Applied science Uni. /1996, and Philadelphia Uni. / 1996.

COUNCIL MEMBERSHIPS

1. Deans council, Mutah uni. March 92 ~ Sept. 94.
2. Elect. Eng. Dept., Mutah uni. Since 1989.
3. Eng. Faculty postgraduate studies, since 1997.
4. Amman applied Engineering Uni. College, 92 ~94.
5. Editorial board, Mutah Lil-Buhooth Wa Al- Dirasat/ Natural and Applied Science Series, 1992/93/94/95/96. Mutah University.

PROFESSIONAL EXPERIENCE

1. Conference chairman, 1st. National Jordanian conference on electrical Engineering , Mutah University, 1993.
2. Chairman, cooperation committee between the University and the Royal Jordanian Air Force, 1992 & 1993.
3. Chairman, cooperation committee between the University and the Jordan Industrial Cities Corporation, 1992 & 1993.
4. Chairman, cooperation committee between the University and Jordan Cement factories Company, 1992 & 1993.
5. Technical reviewer, Jordan National Scientific week/1994, Mutah Journal
6. Member, board of directors / consultation, technical services and continuing education center, Mutah Uni. 1992/3.
7. Member, scientific committee for the 1st. conference on Space and Astronomy, Jordan University, 1994.
8. Member, organizing committee for the 4th. technical conference on Telecommunications and Information Systems, status and trends in Islamic countries, Jordan Engineering Association, Amman, May 1995.
9. Member, Jordan national committee for PANORAMA project since 199
10. Chairman/Member , more than (20) twenty various committees in Mutah University.

PUBLICATIONS

1. El-jaafreh, Y. and Macario R., `` Co-and adjacent Channel Interference thresholds to and from European SECAM Television Versue Various Land Mobile radio Modulations `` , Fourth International Conference on Land Mobile Radio, University of Warick, Coventry, UK., Dec.1987.
 2. El-jaafreh, Y. and Macario R., `` Experience With a Multi Rate Modem System for data Transmission Over 12.5 KHz Land Mobile Radio``, IEE Colloquium, LONDON, 1990.
 3. El-jaafreh, Y., `` Aspect of Data Transmission within present Day Mobile Radio Services``, Journal of Engineering, Vol. 5, Number [1], (9-22), 1995.
 4. El-jaafreh, Y., `` An Intelligent Frame Assembler and Disassembler Controller for Channel Monitoring Over Packet Radio Networks``
* Mutah Journal Lil-Buhooth Wa- Aldirasat, Natural and Applied science series Vol. 10, No. [3], Oct.1995.
 5. El-jaafreh, Y., `` Transient Behaviour of the Characteristics Impedance Transformation of A Non-Uniform Coaxial Transmission Line ``
* Mutah Journal Lil-Buhooth Wa- Aldirasat, Natural and Applied science series Vol. 11, No. [3], Oct.1996.
 6. El-jaafreh, Y., `` An Intelligent Adaptive Land Mobile Radio System For Sharing UHF Band Spectrum With Conventional television Signals ``
* Mutah Journal Lil-Buhooth Wa- Aldirasat, Natural and Applied science series Vol. 11, No. [5],1998.
 7. El-jaafreh, Y., `` A Microprocessor Operated Low Bit-Rate Digitized Speech Transmission Over VHF Land Mobile Radio ``
* Mutah Journal Lil-Buhooth Wa- Aldirasat, Natural and Applied science series Vol. X, No. [X], Oct.1997.
 8. El-jaafreh, Y., `` Engineering Education in the Southern Region of the Hashemite Kingdom of Jordan ``
* Mutah Journal Lil-Buhooth Wa- Aldirasat, Natural and Applied science series Vol. 11, No. [1], Nov.1996.
- * Mutah Journal Lil-Buhooth Wa- Aldirasat, Natural and Applied science series is a Refereed and Indexed Journal Published by The Deanship of Scientific Research and Graduate Studies/ Mutah University, JORDAN

SEMINARS / SYMPOSIUMS AND CONFERENCES

- First National Conference on Electrical Engineering, Mutah Uni., 1993.
- IEE Colloquia on Multi- Rate Modulation, LONDON, 1990.
- Fourth International Conference on Land Mobile Radio, Warwick University, 1987.
- Modern Radar Systems; design and Synthesis, UK, 1983.
- Electronic Defense Symposium ,UK, 1983.
- Missile Guidance Systems, USA, 1982.
- IHAWK Guided Weapon System, USA, 1981.
- Advanced Technology in defense Missiles, UK, 1980.
- Staff Officer Course, Royal Jordanian Air Force, 1980.
- Staff Officer Course, Royal British Air Force, UK, 1984.

CURRENT RESEARCH PROJECTS

- Slow Frequency Hopping and Code Division Multiple Access for Cellular GSM Implementing Spread Spectrum Techniques.
- Novel Analytical Analysis of Bit Error Rate BER Distribution Over Severe Multi-path Fading Channel of a Digital communication System.
- principle of Guided weapons System technology (Book).



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form :
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729-499/571898

A receipt
of the
signed
application



- Each question must be answered clearly and completely. Type or print in black ink.
- If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:

Training Course
workshop
Study Tour.

SURNAME: First name: Middle name(s): Maiden name (for women):

IKhmayies Shadia Jamil Abdel-Fattah —

Place of birth: (city and country) Present nationality: Date of birth: (day - month - year)

AL-Khalil - Jordan Jordanian 13-5-1966
West-Bank

Male Female Marital status: Single

Home address: Talbeia Camp - Zeeza

Tel. no.: 9626/5671654
Fax no.: 5699608

City: Amman

Country: Jordan

Post code: 11162

E-mail: —

Name and address of person to notify in case of emergency

Name: Isa Abdel-Hadi Relationship: Brother in law
At: Abue wale
Amman - Jordan
Jabal el-Hussain

Tel. no.: 9626/5671654
9626/5699608

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
Universities of Jordan	Jordan	Physics	1997 →	
= = =	=	=	1983-1987	M.Sc
= = =	=	=	1979-1983	B.Sc

Subject of specialization:

Laser Spectroscopy

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge language)

What is your mother tongue? **Arabic**

Knowledge of English:

	Excellent	Good	Average
Speak:			✓
Read:	✓		
Write:		✓	

What other languages are you proficient in? —

INSTITUTION

Name and full address of permanent institution:

AL-ISRA University

Tel. no.: **9626/591581-591710**

Telefax: **591505**

Telex: —

E-mail: —

City: **Ammar**

Country: **Jordan**

Post code:

1162

Field of activity of your institute or organization:

Teaching & Research.

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Teaching 1st year physics (Theory & labs) Rank: Instructor

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
University of Jordan	Teaching Assistant 1992-1997	Research in semiconductors.	Teaching 3rd & 4th year in physics.

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Awards/scholarships: —

Projects/patents: —

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.)

1- Light-induced Electrical Inhomogeneity in HgI₂ Crystal

**Dirasat (Pure & Applied Sciences), Volume 21B, Number 6, 1994
Riyad N. Ahmed Bitar, S.J. Khomayes, K.A. Wishah, M.M. Abdul-Gader & Y. Mahmud.**

2- Anomalous Effect of DC-High Electric Field on the Dielectric Dispersion of HgI₂ Crystals.

Y.A. Mahmud, K.A. Wishah, M.M. Abdul-Gader, S. Khomayess, S. Musameh & R.N. Ahmed - Bitar.

Prof. Y.E.E Gamal
Vice Dean
N. LL.E.S. - Cairo University
Giza , Egypt
Fax : +202-5729499/571898

Dear Prof. Y.E.E. Gamal

I am Shadia Jamil Abdel-Fattah Ikhmayies. Now I am a graduate student (PHD) in the University of Jordan . I finished one year & I am now in the second year. My research of the dissertation will be in laser spectroscopy with Prof. R. Bitar who was my supervisor in the M.sc theasis . I worked with him in laser spectroscopy of NaK molecule . We have used Dye laser & our system consisted mainly of a heat pipe oven in which we put Na & K then heating it to get the vapors.

I am interested in physics in general & in laser research in particular . I have always participated in the conferences ,workships, physics schools in Jordan from 1981 to 1998 . For example I participated in the 1st , 2nd, 3rd , 4th , & 6th Petra Schools of physics , but without giving simiuars. Also I participated in the 1st & 2nd conferences of laser in Jordan University . Also their are conferences & workships in other fields of physics in which I was a member .

Two years ago I worked with a team in semiconductors in the University of Jordan & we puplished two papers . But after finishing the courses in the PHD program I will write my dissertation on laser spectroscopy as I said before with prof. Bitar & then continue in the field .

f.
oi
m
I
de

a
Sig

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS
Please specify your function and activity in such organization(s)

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places: Petra School of Physics / Jordan Year: 1998, 1982, 1985
Second Laser conference / Jordan 1994

Have you participated in ICS activities in the past? Yes No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

To expand my knowledge in Laser Technology & Applications.

REFERENCES:

If requires the name and address of three referees in support of your application

- | Name | Position held | Address |
|--------------------------|----------------------------|--------------------|
| 1. Dr. Riyad Bitar | Prof in physics | Jordan University |
| 2. Dr. Vasser Saleh | Deen of college of science | |
| 3. Dr. Gharem AL-Hassawi | Deen of college of science | AL-ISRA University |

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Shadia I Khmagies

Signature of candidate

Date

14/9/98

04/05 '98 MON 13:54 FAX 30 30 0220122

ICS UNIDO

12/004



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Aren Science Park, Padriciano 99, 34012 Trieste (Italy)

APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS

A copy of the completed Application Form should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571899



Each question must be answered clearly and completely. Type or print in black ink.
If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:

International Workshop in
Cairo (9-21/11/98)

SURNAME: First name: Middle names: Maiden name (for women):

ABU-JDAYIL BASIM MOHD ISMAIL

Place of birth: (city and country) Present nationality: Date of birth: (day - month - year)

AL-SAMOU³ JORDANIAN 15/5/65

Male Female Marital status: MARRIED

Home address: Jordan University of Science and Technology (JUST)
City: Irbid Tel. no.: +962/2/295111
Country: Jordan Post code: 22110 Fax no.: Ext.: 3172
E-mail: +962/2/295018 jdayil@just.edu.jo

Name and address of person to notify in case of emergency

Name: Moh'd Abu-Jdayil Relationship: Tel. no.: +962/9/914458

P.O. Box: 113, Idhleil - Jordan

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
* Erlangen - Nürnberg	Germany	Fluid Mechanics	92 - 96	Ph.D.
* Univ. of Jordan	Jordan	Chem. Eng.	88 - 91	M.Sc.
* JUST	=	=	83 - 88	B.Sc.

Subject of specialization: Fluid Mechanics / Rheology

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS
Please specify your function and activity in such organization(s)

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

See my attached C.V.

Have you participated in ICS activities in the past?
If yes, which?

Yes

No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

I use the laser technology in my research, and I would like to update my knowledge in the field of laser applications.

REFERENCES:

It requires the name and address of three referees in support of your application

Name	Position held	Address
1. P.O. Brunn	Prof.	LSTM / Erlangen / Germany
2. F. Durst	Prof.	=
3. F. Banat	Prof.	JUST / Jordan.

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDU

Important: Travel and per diem grant can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the INTERNATIONAL UNION OF ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDU/ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Signature of candidate

Date

17/10/1998

ملاحظة: لقد تم ترشيحي من قبل جامعة العلوم والتكنولوجيا الاردنية
لخصم لغرضه المذكوره في كتاب المرجع من ريش الجامعه
بالوكالة د. نيام صنوبري الاستاذ الدكتور فاروق اسامير طه بدارنج
17/10/1998 والذيل يحمل الرقم 14-4-FC-UNEA

د باسم ابو عبدالله

LANGUAGES (the most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? **Arabic**

Knowledge of English:

	Excellent	Good	Average
Speak:		✓	
Read:	✓		
Write:	✓		

What other languages are you proficient in?

German

INSTITUTION

Name and full address of permanent institution:

Jordan Univ. of Science and Technology

Tel. no. **+ 962 / 2 / 295111**

Telefax: **+ 962 / 2 / 295018**

Telex:

E-mail: **jday11@just.edu.jo**

City: **Irbid**

Country: **Jordan**

Post code: **22110**

Field of activity of your institute or organization:

Academic Activities

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area.

Teaching and Research / Fluid Mechanics; Rheology

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
* JUST/Jordan	Assitant Prof. 1997 - present	Chem. Eng. / Fluid Mechanics	Teaching & Research.
* LSTM/Erlangen Germany	Research Assitant	Fluid Mechanics/ LDA	Research

THIRD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Study of Rheological Properties of modified polymer

Awards/scholarships:

DAAD - Scholarship

Projects/patents:

SCIENTIFIC PUBLICATIONS (Specify the number of your publications inc. books, articles and give the title of max. 3 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

See my attached C.V.

Basim Abu-Jdayil

Nationality: Jordanian
Date of Birth: 15 May, 1965
Place of Birth: Al-Samou'

Chemical Engineering Dept.
Jordan University of Science
and Technology
P.O. Box: 3030
22110 Irbid
JORDAN
Tel: + 962 2 295111
Fax: + 962 2 295123
Email: jdayil@just.edu.jo

EDUCATION

- *Ph.D.* (Chemical Eng.), Dept. Of Fluid Mechanics, Erlangen-Nurmberg University, Germany (October, 1996).
Thesis:
Electrorheological Fluids in Rotational Couette Flow, Slit Flow and Torsional Flow (Clutch).
- *M.Sc.* (Chemical Eng.), University of Jordan, Amman, Jordan (January, 1991).
Thesis:
Desulfurization of Jordanian Oil Shale.
- *B.Sc.* (Chemical Eng.), Jordan University of Science and Technology, Irbid, Jordan (June, 1988).
Thesis:
Heat Transfer from a Heating Helical Coil in a Propeller-Agitated Vessel.

PROFESSIONAL BACKGROUND

- Assistant-Professor at the Dept. of Chemical Engineering, Jordan University of Science & Technology, Irbid, Jordan (February, 1997 - present).
- Visiting Researcher at the Faculty of applied Physics, University of Twente, Enschede, Holland (June 15, 1997 - August 15, 1997).
- Research Assistant at the Dept. Of Fluid Mechanics (Rheology Section), Erlangen-Nurmberg University, Germany (October, 1992 - December, 1996).
- Process Engineer at Lulua Spinning and Weaving Factory, Amman, Jordan (November, 1991 - March, 1992).
- Teaching and Research Assistant at the Dept. Of Chem. Eng., University of Jordan, Amman, Jordan (September, 1989 - January, 1991).
- Teaching Assistant at the Dept. Of Chemistry, University of Jordan, Amman, Jordan (September, 1988 - June, 1989).

- Process Engineer Trainee at Jordan Sulfo-Chemicals Co., Zarka, Jordan (June - August, 1987).

PUBLISHED ARTICLES

- Abu-Jdayil, B., Y. Hamarneh and N. Haimour, "Oxydesulfurization of Jordanian Oil Shale", *Dirasat* **20 B**, 143-164 (1993).
- Abu-Jdayil, B. and P. O. Brunn, "Optical measurements of the velocity profile of an ER-fluid in a rectangular conduit", *Rheology* **4**, 186-191 (1994).
- Abu-Jdayil, B. and P. O. Brunn, "Effects of non-uniform electric field on slit flow of an electrorheological fluid", *J. Rheol.* **39**, 1327-1341 (1995).
- Abu-Jdayil, B. and P. O. Brunn, "Effects of electrode morphology on slit flow of an electrorheological fluid", *J. Non-Newtonian Fluid Mech.* **63**, 45-61 (1996).
- Brunn, P. O. and B. Abu-Jdayil, "Fluide mit veruenderbaren Eigenschaften", *AGT DOKUMENTATION* **25**, 60-64 (1996)
- Abu-Jdayil, B. and P. O. Brunn, "Study of the flow behavior of electrorheological fluids at shear and flow-mode", *Chem. Eng. Process.* **36**, 281-289 (1997).
- Abu-Jdayil, B. and P. O. Brunn, "Effects of coating on the behavior of electrorheological fluids in torsional flow", *Smart Mater. Struct.* **6**, 509-520 (1997).
- Brunn, P. O. and B. Abu-Jdayil, "Fluids with transverse isotropy as models for electrorheological fluids", *Z. Angew. Math. Mech.* **78**, 97-107 (1998).

PARTICIPATION IN INTER. & LOCAL CONFERENCES

- Jordanian Chemical Engineering Conference I, October 18 - 20, 1993, Amman, Jordan.
- Annual Meeting of the German Society of Rheology, May 22 -23, 1995, Berlin, Germany.
- Annual Meeting of the German Society of Process and Chemical Engineering, March 6 -8, 1996, Lahnstein, Germany.
- 2nd Symposium on Modern Detergent and Soap Techniques, May 26 - 28, 1998.
- Workshop on Modern Oil-Shale Retorting Techniques in Arab Countries, September 26 - 28, 1998.

CURRICULUM VITAE

Name: Yaser Ahamad Yousef.

Date & Place of Birth: 25/2/1956, Atara.

Nationality: Jordanian.

Marital Status : Married / 4 Children.

Address:

Laser Spectroscopy Research Laboratory/ Chemistry Department.
Yarmouk University, Irbid, Jordan.

Phone: Office: 962 2 271100 ext. 2814, Home: 962 2 7100847

Fax : 962 2 274725.

e-mail : yaserhaj@hotmail.com.

Education:

1975, High School-Hawalli Secondary School Kuwait.

1977, Diploma / Greek Language / Arestotelis University
Thessaloniki/ Greece.

1981, B.Sc. Physics & Computer Science - Kuwait University.

1988, Master Equivalence Physics - Paris VI University (Pierre et Marie
Curie).

1992, Ph.D Physical Chemistry - Paris VI University (Pierre et Marie Curie).

Experience: 1981-1990 Research & Teaching Assistant. **Physics Department,
Kuwait University.**

1983-1990 Part time Technical Job, **Casio Agency Kuwait**

1992-1993 Service Manager , **Casio Agency, Amman, Jordan.**

1993-1994 Technical Manager, **Ammon Enterprise, Amman, Jordan.**

1994-1996 Full time lecturer, **Chemistry department, Yarmouk
University, Irbid, Jordan.**

1996- Assistent Professor, Chemistry department, Yarmouk University, Irbid, Jordan.

Training Courses:

1985 Training course Raman Spectroscopy- (Jobin Yvon [S.A Instruments]. Longameu, France).

1986 Training course in the operation and maintenance of Ar⁺ Lasers, Kuwait University, by Spectra Physics Company.

1988 Training course in the operation and maintenance of Excimer Lasers, Kuwait University, by Lambda Physique Company.

1995 Training course in the operation and maintenance of Mass spectrometers, Tubingen University, Tubingen, Germany.

Fellowships:

- Research Fellowship from CNRS Paris, France 1991-1992.

-Research Fellowship from European Community (EC) to North East Wales Institute U.K , (Oct.- Dec.) 1995.

Conferences:

■ Second international conference Lasers in science and technology 12 - 16 August 1994, Physics department, University of Jordan, Amman - Jordan.

■ Jordanian Chemical Society 3ed conference, 21-22 Nov. 1994, Jordan University for Science and Technology, Jordan.

• Sub-regional training workshop for users of the IRPTC data bank United Nations Environmental Program 3-5, December 1996, Yarmouk University, Irbid-Jordan.

Fields of Research:

■ High resolution laser spectroscopy.

■ Low temperature spectroscopy, Shpolskii technique.

■ Optical properties of thin films using photoacoustic spectroscopy.

List of Publications:

- 1- Laser line narrowing and laser-excited Shpol'skii effect of impurity spectra of polynuclear aromatic hydrocarbon solids. (Book, **Molecules in Physics, Chemistry and Biology**, Kluwer Academic Publishers, 1988, English, 2).
- 2- Identification and characterization of polynuclear aromatic hydrocarbons in the atmosphere using laser line narrowing and laser excited shpol'skii effect. (Paper, **Abhath Al- Yarmouk**, Jordan, 81-91, vol. 6, 1997 , English, 2).
- 3- Accelerated aging of natural rubber. (Paper, **Journal of Applied Polymer Science**, U.S.A, 1986, English, 2).
- 4- Thermal degradation of butadiene-styrene-based rubber. (Paper, **Journal of Applied Polymer Science**, U.S.A, 1986, English, 2).
- 5- Determination of the thickness and refractive index of Cu_2O thin films using thermal and optical interferometry. (Paper, **Phys. Stat. Sol.**, Germany, 1986, English)
- 6- Investigation of Cu_2O thin films using thermal and optical interferometry. (Paper, **Phys. Stat. Sol.**, Germany, 1989, English, 2).
- 7- Conformational stability, structure, and vibrational spectra of cyclopropylmethanol. (Paper, **J. Molecular Structure**, Elsevier Science Publishers B.V., Holland, 1990, English, 2).
- 8- A redetermination of the lifetime of the $4s\ 5s\ (3s1)$ level in Ca by high-rate electron photon stepwise pulse excitation.(Paper, **J. Quant. Radiat. Transfer**, Great Britain, 1985, English, 2)
- 9- Design and construction of a microcomputer based interface/controller to drive and process spectrophotometer data. (Paper, **Optica Applicata**, Poland, 1996, English.
- 10- Superconductivity and photoacoustic properties of sintered LaSrCuO . (Paper, **Materials Research Society**, U.S.A, 1987, English, 2).
- 11- Photoacoustic studies of interaction of O_2 with Cu_2O thin films, paper, **Appl. Phys. Lett.** 61 (8),24 August 1992.
- 12- Thermal interferometry of Cu_2O thin films electrodeposited on stainless steel substrates, paper, **Phys. Stat. Sol.** (a) 135, 17, (1993).
- 13- Design and assembly of an ultra-fast spectrophotometer for monitoring fast chemical reactions (in press).

04/08 '08 MON 13:54 FAX 38 40 0228122

ICS UNIDO



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH-TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)

APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form should be sent by FAX to:
(The original should be sent by mail)

PROF. V.I.H. CAMAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571898



- Each question must be answered clearly and completely. Type or print in black ink.
- If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:

Workshop, Training Course
and Study Tour

SURNAME: ROOMYIA First name: Abdohamoud Middle name(s): Abdullatif Maiden name (for women):
Place of birth: (city and country) Gaza, Palestine Present nationality: Palestinian Date of birth: (day - month - year) 15.6.1949

Male Female Marital status: Male

Home address: 2512 Beit-Lahia - Gaza, P. National Authority
City: Gaza Tel. no.: 2823311
Country: Palestine Post code: PDB 108 Fax no.: 2823310
E-mail: 00972-7-2823310
mroomyia@lugaza.ed

Name and address of person to notify in case of emergency
Name: Dr. Saoud Roomyia Relationship: Brother Tel. no.: 00972-72-458096
Address:

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
Alexandria University	Egypt	Nuclear physics	1995	Ph D.
"	"	Solid State Phys.	1984	Msc.
"	"	Undergraduate	1979	BS c.

Subject of specialization:

4/05 '98 MON 13:55 FAX 30 40 0228122

ICS UNIDO

01005

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? *Arabic*

Knowledge of English:

	Excellent	Good	Average
Speak:			✓
Read:	✓		
Write:	✓		

What other languages are you proficient in? */*

INSTITUTION

Name and full address of permanent institution:

Islamic University of Gaza

Tel. no.: *2863554*
0097272823311

Telefax: *2823310*

Telex:

E-mail: *mroomyia@iugaza.edu*

City: *Gaza*

Country: *Palestine*

Post code: *POB 108*

Field of activity of your institute or organization:

Education

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area.

Assist. Prof. of Physics

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization.

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
<i>IUG</i>	<i>Assist. Prof.</i>	<i>Education</i>	<i>Teaching</i>

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 3 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference).

4:08 '98 MON 10:55 FAX 30 40 P228122

ICS UNIDO

0000

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS
Please specify your function and activity in each organization(s)

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places *2nd Radiation Phys. Conference: Egypt* Year *1994*

Have you participated in ICS activities in the past? Yes No
If yes, which?

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

To participate in a new field of experience and training the application of lasers

REFERENCES:
It requires the name and address of three referees in support of your application

Name	Position held	Address
1. <i>Dr. Younis S. Selim</i>		<i>Alex. Univ. Faculty of Science</i>
2. <i>Dr. Adnan EL-gazzaz</i>		<i>Islamic Univ. of Gaza</i>
3. <i>Dr. M. Shabat.</i>		<i>Islamic Univ. of Gaza</i>

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

M. Roamyia
Signature of candidate

27.9.1998
Date

04/05 '98 MON 10:54 FAX 39 49 9228122

ICS UNIDO



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form:
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.E. GANAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571898

A recent photograph
of the candidate
should be
attached here,
signed legibly
on the reverse

- Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
 Training Course
 Study Tour

Please specify title of activity:

Laser Science and its Applied
Technology

SALIH

SUBHI

K.

SURNAME:

First name:

Middle name(s):

Maiden name (for women):

Tulkarm - Palestine

Palestinian

2-10-1950

Place of birth: (city and country)

Present nationality:

Date of birth: (day - month - year)

 Male Female

Marital status:

Home address: Shufa - Tulkarm / Palestine

Tel. no.: 972 (09) 2673852

Fax no.:

City: Tulkarm

Country: Palestine

Post code:

E-mail: Ssalih@Najah.edu

Name and address of person to notify in case of emergency

Name:

Relationship:

Tel. no.: (972) 09 2 673856

At: Salih Abdel Haleem Brother

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
Wisconsin Univ - Madison	U.S.A	Laser Spectroscopy (Atomic physics)	5 Years	Ph.D
Jordan Univ. Amman	Jordan	Nuclear theory	2 Years	M.Sc.

Subject of specialization:

2- NON-SELF-CONSISTENT ENERGY
CALCULATIONS OF NUCLII.

RESEARCH SKILLS: GOOD EXPERIENCE IN PULSED LASERS,
DYE LASERS, AND FREQUENCY DOUBLING
TECHNIQUES.

Membership:

1. American Association of physics Teachers since 1984 .
2. American physical society since 1996.

REFERENCES

1. N.I. Kassis and S.K. Khalil , Nucl. Phys. A315 (1979)381.
"None-Self-Consistent Energy Calculations With A Density-Dependent ffective Interaction".
2. D.W. Duquette, S. Salih, and J.E. Lawler, Phys.Lett. 83 A, 214,
(1981)."Radiative Lifetimes In Mol Using A Novel Atomic Beam Source".
3. D.W.Duquette, S. Salih, and J.E. Lawler, Phys. s.Rev. A 24,284
(1981)."Radiative Lifetimes In WI Using A Novel Atomic Beam Source".
4. D.W. Duquette, S. Salih, and J.E. Lawler, Phys. Rev. A25,3382 (1982).
"Radiative Lifetimes In ZrI".
5. D.W. Duquette, S. Salih, and J.E. Lawler, Phys . Rev. A 26,2623 (1982).
"Radiative Lifetimes In HfI"
6. D.W. Duquette, S. Salih, and J.E. Lawler, J.Phys. B15 (1982) L897.
"Radiative Lifetimes In R".
7. S. Salih, D.W. Duquette , and J. E. Lawler , phys. Rev. A 27, 1193 (1983).
"Radiative Lifetimes in Rhl and in Tal".
8. S.Salih , and J.E. Lawler , Phys. Rev. A28,3653 (1983).
"Puled Ion Source For Laser Spectroscopy: Application To NbII".
9. D.K. Doughty, S. Salih, and J.E. Lawler, Phys. Lett. A 103,41 (1984).
"Two Step Optogalvanic Effect Using Intersecting Laser Beams: A Pinpoint
Discharge Diagnostic.:
10. S. Salih, J.E. Lawler, and W.Whaling , Phys. Rev. A 31,744 (1985).
"Lifetimes , Branching Ratios, and Transition Probabilities In Coll".

C.V.

NAME :SUBHI KAMEL SALIH
 PERMANENT ADDRESS: :SHUFA - TULKARM, WEST-BANK
 MAILING ADDERS :AN-NAJAH NATIONAL UNIVERSITY
 NABLUS, WESTBANK
 VIA ISRAEL
 Tel. 972 (09) 673852 (home)
 Fax. 9721(09) 387982
 e.mail. ssalih @ najah .edu.

EDUCATION

<u>DEGREE</u>	<u>UNIVERSITY</u>	<u>STATE</u>	<u>YEAR</u>
B.Sc./PHYSICS	JORDAN	JORDAN	1972
M.Sc./THEORETICAL PHYSICS	JORDAN	JORDAN	1978
Ph.D./ATOMIC PHYSICS	WISCONSIN	WI/MADISON	1985

EXPERIENCE

CURRENTLY: Associate Professor of Physics, An-Najah National University.
1989-1990: Research Associate / Wisconsin University University-Madison, U.S.A.
1985-1989: Assistant Professor of Physics / An-Najah National University.
1980-1985: On scholarship to U.S.A. to get Ph.D. in Physics.
1978-1980: Lecturer at Physics Department/ An-Najah National University.
1972-1978: High school physics teacher / Ministry of Education , JORDAN -Amman.

CONFERENCES

1. GEC, Boulder, Colorado, 1984
2. Petra School, Amman, Jordan, 1987
3. Lasers in Chemistry, Trieste (ICTP), Italy, 1993.
4. Photochemistry, Trieste (ICTP), Italy, 1993.
5. Lasers in Science and Technology, Amman, Jordan, 1994.
6. Physics Education Improvement, Cairo, Egypt, 1994.

RESEARCH

THESIS RESEARCH: "LIFETIME MEASUREMENTS ON ATOMS D IONS USING TIME-RESOLVED LASER INDUCED FLUORESENCE"

OTHER RESEARCH: 1- OPTOGALVANIC EFFECTS IN THE CATHODE FALL.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS
Please specify your function and activity in such organization(s)

AAPT membership
APS membership

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places	Year
Physics Education - Barzeit Univ.	1997
Lasers in Chemistry Trieste	1994
Photochemistry "	1994

Have you participated in ICS activities in the past? Yes No
If yes, which? See above

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

1. Update myself of present laser applications in various disciplines
2. Get some experience of advances in laser sources.
3. Get experience of how to use lasers in my country for the welfare of my people

REFERENCES:

If requires the name and address of three referees in support of your application

Name	Position held	Address
1. Dr. Sami El-Jaber	Associate prof.	Am-Najah University / physics
2. Dr. Maher Eid	Prof. (Academic Vice President)	" / Chemistry
3. Dr. Hikmat Hilal	prof.	" / Chemistry

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Sabih' Salah
Signature of candidate

23-9-1998
Date

4/05 '88 MON 13:55 FAX 59 40 9228122

ICS UNIDO

01005

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue?

Knowledge of English:

	Excellent	Good	Average
Speak:		✓	
Read:	✓		
Write:		✓	

What other languages are you proficient in? Arabic

INSTITUTION

Name and full address of permanent institution:

An-Najah University

City: Nablus

Country: Palestine

Post code: 7

Tel. no.: 972 09 231113

Telefax:

Telex:

E-mail: 972 092387982

Field of activity of your institute or organization: Teaching physics Courses + Research

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
An-Najah Univ.	Assistant Prof. (1985-1995)	Teaching + Research	Department head (1991-1994)
An-Najah Univ.	Associate Prof. 1996-1998	Teaching + Research	—

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

11. S.Salih, and J.E. Lawler , J.Am. opt Soc B 2, 422 (1985). "Radiative Lifetimes and Stellar Abundances".
12. J.E. Lawler, D.K Doughty, E.A.Den Hartog and S.Salih, 1985, in : "Radiation Processes in Discharge Plasma, " edited by Proud, J.M., and Luessen, I.h., Plenum, New York.
13. J.E. Lawler and S.Salih, Phys. Rev. A35, 5046 (1987). "Radiative Lifetimes In NiII".
14. S.Salih and J.E. Lawler, Astron. Astrophys. 239,407(1990). "Radiative Lifetimes In TiI".
15. B. Shrydeh and S.Salih , Spectroscopy Letters 27(3), 333, 1994. "A spectroscopic study of preferential Solvation of Fe (bipy)₂ , (CN)₂ In Binary Aqueous 2-Ethoxy Ethanol Mixtures"
16. M. E.Wickliffe , S.Salih and J.E lawler, J.Quant - Spectroscopy Radiat. Transfer 51,4,5435, 1994. "Atomic Transition Probabilities in RnI"

04/05 '98 MON 13:54 FAX 39 40 9228122

ICS UNIDO

0004



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)

APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form :
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729-499/571898

A recent photograph
of the candidate
should be
attached here,
signed legibly
on the reverse

-- Each question must be answered clearly and completely. Type or print in black ink.
-- If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:

Laser Science and its
applied technology

SURNAME: SAKEEK First name: Hazem Middle name(s): Falah Maiden name (for women):

Place of birth: (city and country) Gaza Present nationality: Palestinian Date of birth: (day - month - year) 18/9/1965

Male Female Marital status:

Home address:

City: Gaza - Al-Remal AL-Thalatheen street Tel. no.:
Country: Post code: 31-51 Fax no.:
E-mail:

Name and address of person to notify in case of emergency

Name: Suhail sakeek Relationship: Tel. no.: 07-2869997
Address: Gaza

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
<u>PhD Queen's University</u>		<u>physics</u>	<u>3</u>	<u>PhD</u>

Subject of specialization:

4/05 '08 MON 13:55 FAX 39 40 0228122

ICS UNIDO

1005

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? *Arabic*

Knowledge of English:

	<i>Excellent</i>	<i>Good</i>	<i>Average</i>
Speak:	<i>✓</i>	<i>✓</i>	
Read:		<i>✓</i>	
Write:		<i>✓</i>	

What other languages are you proficient in?

INSTITUTION

Name and full address of permanent institution:

AL-Azhar University of Gaza
P. O. Box 1277

City:

Country: *Gaza*

Post code:

Tel. no.: *07-2824020*

Telefax: *07-2823180*

Telex:

E-mail: *alazhar@palnet.com*

Field of activity of your institute or organization:

Education

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Lecturer in physics, Head of physics dept.
Director of computer center

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
	<i>see attached paper</i>		

SCIENTIFIC ACTIVITIES

see attached paper

List of your publications inc. books, articles and give the title of max. 5 of your (for activity) as well as the precise reference.

see attached paper

Conferences Presentation

- (1) Third International Superconductive Electronics Conference, 25 - 27 June 1991. University of Strathclyde. "YBaCuO / PrBaCuO Multilayers by Excimer Laser Ablation" H. F. Sakeek, C. C. Smyth, C. M. Rowan, R. J. Turner, T. Morrow, W. G. Graham and D. G. Walmsley.
- (2) 3rd European Quantum Electronics Conference, 27 - 30 August 1991, Physics department, Heriot-Watt University, Edinburgh. "Superconducting films by excimer laser ablation and spectral characterization of the plasma plume". H.F. Sakeek, M. Higgins, C. Smyth, T.Morrow, W.G. Graham, and D.G. Walmsley.
- (3) 44th Annual Gaseous Electronics Conference, 22-25 October 1991 - Albuquerque, NM. "Optical absorption spectroscopy study of the role of plasma chemistry in YBCO pulsed laser deposition". W.G. Graham, H.F. Sakeek, T. Morrow, and D.G. Walmsley.
- (4) Irish plasma and beam processing group annual conference, 23-24 April 1992. International Microelectronics Research Center, Cork, Ireland "Optical absorption spectroscopy of YBaCuO plasma plume". H.F. Sakeek, T.Morrow, W.G. Graham, and D.G. Walmsley.
- (5) Institute of Physics Condensed Matter and Material Physics conference, University of Sheffield, Sheffield, U. K. 15-17 December 1992. "Emission spectroscopy studies of the plume produced during YBaCuO thin film production by laser ablation". H.F. Sakeek, T.Morrow, W.G. Graham, and D.G. Walmsley.
- (6) The first Physics Conference, Islamic University of Gaza. 28 May 1994. "High Tc superconducting thin film by laser ablation". H.F. Sakeek.

Publications

Publications from the MSc. Degree

- (1) H. F. Sakeek, G.J. Malcom, and I.A. Armour, *A Feasibility study for a laser-scanning hardcopier*. Central Electricity Generating Board, Research report, December 1989.

Publications from the Ph.D. Degree

- (1) H. F. Sakeek, M. Higgins, W.G. Graham, T. Morrow, R.J. Turner and D.G. Walmsley. *"Superconducting $YBa_2Cu_3O_7$ thin films on MgO by KrF laser ablation: Optimization of deposition parameters"*. J. Appl. Phys. **70** 1991.
- (2) H. F. Sakeek, C. C. Smyth, C. M. Rowan, R. J. Turner, T. Morrow, W. G. Graham and D. G. Walmsley. *"YBaCuO / PrBaCuO Multilayers by Excimer Laser Ablation"*. Supercond. Science and Tech. **4** 613 1991.
- (3) D. G. Walmsley, H. F. Sakeek, T. Morrow, C. Rowan and R. J. Turner. *"YBaCuO films by excimer laser ablation"*. Material Science and Engineering-B13 **15** 1992.

Publications after the PhD Degree

- (1) H. F. Sakeek, T. Morrow, W. G. Graham, and D.G. Walmsley, *Optical absorption spectroscopy study of the role of plasma chemistry in $Ba_2Cu_3O_7$ pulsed laser deposition*. Appl. Phys. Lett. **59** 3631 30 December 1991.
- (2) H. F. Sakeek, T. Morrow, W. G. Graham, and D.G. Walmsley. *"Emission studies of the plume produced during YBaCuO thin film production by laser ablation"*. J. Appl. Phys. **75** 1138 1994.
- (3) T. Morrow, H. F. Sakeek, A. El-Astal, W. G. Graham, and D.G. Walmsley. *"Absorption and emission spectra of the YBaCuO laser plume"*. J. of Superconductivity **7** 823 1994.
- (4) J. McLaughlin, H. F. Sakeek, P. Maguire, W. G. Graham, J. Molloy, T. Morrow, S. Lavery and J. Anderson. *"Properties of ZnS:Mn thin films prepared by 248nm pulsed laser deposition"*. Appl. Phys. Lett. **63** 1865 1993.
- (5) H. F. Sakeek, *"Investigation of Shapiro steps and half integral constant-voltage in ramp-type Josephson junctions"* Islamic University Magazine" Vol 4 (no 2) 1996.

4/05 '98 MON 13:55 FAX 30 #0 0228122

ICS UNIDO

0008

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS
Please specify your function and activity in such organization(s)

Member of the Institute of Physics
U.K.

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

see attached

Have you participated in ICS activities in the past?
If yes, which?

Yes

No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

For the great activities in ICS and it will be great
advantage to work there and I expect to contribute in the research
and workshop.

REFERENCES:

It requires the name and address of three referees in support of your application

Name

Position held

Address

- | | | |
|--------------------------|-------------------------------------|-------------------------------|
| 1. Prof. D.G. Walmsley | Dean of science | Queen's university of Belfast |
| 2. Prof. Ayed EL-Khudary | presedant of university | AL-Azhar University Gaza |
| 3. Dr. T. Morrow | Reader Reader of physics | Queen's University of Belfast |

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

H. F. Sakeek 22/11/98
Signature of candidate

22/19/98
Date

Awards and Prizes Gained

- (1) A hand watch for the highest grade in the final year of the secondary school examination results in 1983.
- (2) A collection of some scientific books for my activity in the physics society as secretary, U.A.E. University 1986.
- (3) University-Industry Research Award Queen's University of Belfast 1989
- (4) Lamor-University scholarship Queen's University of Belfast 1990
- (5) University-Industry Research Award Queen's University of Belfast 1990
- (6) Arab student aid international scholarship 1989-1991.
- (7) The Arab-British chamber foundation award 1990-1991.
- (8) A scholarship from the Palestinian Student Fund for the year 1990/91.

Work Experience

- (1) Six month project for the completion of my MSc program was carried out in the industrial company, Central Electricity Generating Board (CEGB), Marchwood Engineering Labs., Southampton, U.K. from June to November 1988. The project title "*Design of optics and Stabilized Modulation System for Laser Scanning Hardcopiers*". The work was published in my Msc Dissertation and in an internal research report in the (CEGB) 1989.
- (2) Demonstrator in Level 'O' Physics laboratory, 1989/90, Queen's University of Belfast.
- (3) Demonstrator in the MSc laboratories, 1990/91, Physics Department, Queen's University of Belfast.
- (4) Post Doctorate Research Fellow in the Physics Department, Queen's University of Belfast. June 1991.- December 1992. I was involved mainly in supervising PhD student in the field of high T_c superconductors and also I extend my research work in the field of emission and absorption spectroscopy of plasma produced by laser ablation of high temperature T_c superconductor.
- (5) Lecturer in the Physics Department, Al-Azhar University of Gaza, 1-January 1993.

The subject I have educated were: General Physics, Electricity and Magnetism, Alternating Current, Thermodynamics, Special theory of relativity, Modern physics and Laser Physics.

Education and Qualifications

	Name	Place	Date	Degree Awarded	Grade
School	Saif Al- Dawulah	U.A.E.	1982-1983	Tawjeehi	91.5%
Undergraduate	U.A.E. University	U.A.E.	1983-1987	BSc in Physics & Mathematics	V-Good
Postgraduate	The Queen's University of Belfast	Belfast U.K.	1987-1988	MSc in Opto-Electronic and Optical Information Processing	MSc
Postgraduate	The Queen's University of Belfast	Belfast U.K.	1989-1991	PhD in Physics	PhD

PhD Research Project

Ph.D research started in **January 1989**, at The Queen's University of Belfast Under project title *'High Tc superconducting thin films by laser Ablation Technique'*. The PhD degree was obtained in **June 1991**.

Experience gained from PhD project

The research project of the high-Tc superconducting thin films by laser ablation at the Queen's University of Belfast was started when I began my PhD research program, therefore, I was involved in the purchase of the necessarily equipment and their installation in the lab and the operation. I have experience in using high vacuum system, the operation of state-of-the-art high power excimer laser, dye laser and other types as well, computer interface with experiment for data acquisition, computer language such as, turbo Pascal and some knowledge of C language.

Using the machine in the workshop for designing various parts of the different experiments carried out during the research project.

Also, valuable skills in dealing with different industrial companies for purchase various parts and equipment for the project.

Positions and Duties

- (1) Head of the Physics Department, Al-Azhar University of Gaza, March 1993 - Now.
- (2) Member of the Institute of Physics since August 1993.
- (3) Director of the Computer Center at Al-Azhar University, since December 1994 - Now.
- (4) Editor of "Al-Oloom wa Al-Marifa" which is the first Arabic scientific magazine in Gaza 1994 - 1995.
- (5) Member of the Continue Education Center at Al-Azhar University of Gaza.
- (6) Director of the Diploma studies in the university, July 1996 - Now>

Scientific Research Activities 1993-1995

- (1) From 20/7/93 - 10/9/93 visit to the Department of Physics, Queen's University of Belfast, U.K.
- (2) From 8/7/94 - 30/8/94 visit to the Department of Solid State Physics, Orsay University, Paris, France. Funded by the French Consulate - Jerusalem.
- (3) From 29/8/94 - 21/9/94 visit to the Department of Physics, Queen's University of Belfast, U.K. Funded by the British Council - Jerusalem.
- (4) From 23/7/95 - 20/9/95 visit to the Institute of Physics, Hamburg University, Germany. Funded by the DAAD scholarship.

Subscription in Scientific Magazine 1993-1996

The following scientific magazine and periodical which I receive monthly since 1993

- (1) Solid State Technology
- (2) Photonics Spectra
- (3) Electro optics
- (4) Laser Focus World
- (5) Physics World
- (6) Scientific American
- (7) Superconductor Industry
- (8) Superconductor Science & Technology
- (9) High Tc Update

03/03 00 NOV 1984 FAX 01 40 9288122 ICS UNIDO



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Pederzano 99, 34012 Treviso (Italy)



APPLICATION FORM

visit our site on <http://www.ics.it> for the latest update on ICS activities

A copy of the completed Application Form should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E. GAMAL
VICE DEAN
N.I.L.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-3723-1973/1878

A recent photograph of the candidate should be attached here, signed legibly on the reverse

Handwritten notes in Arabic and English, including a signature and some illegible text.

Each question must be answered clearly and completely. Type or print in black ink. If more space is required, attach additional pages.

Workshop Training Course Study Tour
Please specify title of activity:

SURNAMES: AL-Nounou First name: Emad Middle name(s): Ahmed Maiden name (for women):

Place of birth: Gaza - Palestine Present nationality: Palestinian Date of birth: 4-10-1960

Sex: Male Female Marital status: Married Tel. no.: 972-7-2823180 Fax no.: 972-7-2823180

City: Gaza Country: Palestine Post code: E-mail: smart@palnet.com

Name and address of person to notify in case of emergency: Name: Al-Azhar University Relationship: Address: Gaza. Tel. no.: 972-7-2827806

ACADEMIC BACKGROUND (higher degrees) with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degree
Zagazig University Faculty of Engineering (Shoubra)	Shoubra Cairo	Electronics & Communication	5 years	Bachelor of Science in Engineering

Subject of specialization:

Handwritten signature in Arabic: محمد عبد الله...

Handwritten signature in Arabic: ...

*** IMMEDIATE REPLY REQUESTED ***

18-02-96 05:30

AL-AZHAR UNIVERSITY-GAZA 972 7 823180

P. 03

MON 13/08 FAX 50 40 8220111

109 UNTDU

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? Arabic

Knowledge of English:			
	Excellent	Good	Average
Speak			
Read			
Write			

What other languages are you proficient in?

INSTITUTION Name and full address of permanent institution:
AL-AZHAR University - Gaza

Tel. no.: (972) 7-2827816
Telefax: (972) 7-2823180
Telex:
E-mail: alazhar@omnet.com

City: Gaza
Country: Palestine

Post code:

Field of activity of your institute or organization: Educational.

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its objectives, your present specific research area, etc. I am the head of technical department, responsible for maintenance of all equipment, work as a consultant for technical committees, supervisor also of laboratories.

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
Beckman Instruments International - Cairo office	Maintenance Supervisor	Installation / technical support of both (BSG) Bio Analytical and (DSG) Diagnosis equipment.	Installation and technical support

RESEARCH PROJECTS UNDERTAKEN

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS (Specify the number of your publications i.e. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

(A)

*** IMMEDIATE REPLY REQUESTED ***

18-02-98 03151

AL AZHAR UNIVERSITY-GAZA #72 T 023100

P. 04

WDS

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS
Please specify your function and activity in each organization(s)

Member of Engineers' Association - Gaza - Palestine
Member of Engineers' Syndicate - Cairo - Egypt

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

Have you participated in ICS activities in the past?
If yes, which?

Yes

No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

REFERENCES:

If required the name and address of three referees in support of your application

Name Position held Address

- 1.
- 2.
- 3.

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO/ICS, the host organization and the host country shall not be held responsible in the event of my death, injury or illness during my trip and participation in the activity.

[Signature]
Signature of candidate

16/9/98
Date

04/05 '08 MON 13:54 FAX 39 40 0228122

ICS UNIDO

0003



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form:
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.A.E. GAMAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729-499/571898

A recent photograph
of the candidate
should be
attached here,
signed legibly
on the reverse

Each question must be answered clearly and completely. Type or print in black ink.
If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:

Workshop

SURNAME: Khalili First name: Ali Middle name(s): A. Hamid Maiden name (for women):
Place of birth: (city and country) Keldar - Iran Present nationality: Iran Date of birth: (day - month - year) 29.4.1970
 Male Female Marital status: Not

Home address: City: Doha Country: Qatar Post code: 132 69 E-mail:
Tel. no.: 892125
Fax no.: 835061

Name and address of person to notify in case of emergency
Name: Mohel. A. Hamid Relationship: brother Tel. no.: 528869
Ad. ss: Doha - Qatar

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
<u>University of Qatar</u>	<u>Qatar</u>	<u>Physics - Science</u>	<u>1990-1995</u>	<u>Bachelor</u>

Subject of specialization:

4/06 '08 MON 13:56 FAX 39 40 0228122

ICS UNIDO

0005

LANGUAGES (In most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? *Arabic*

Knowledge of English:

	<i>Excellent</i>	<i>Good</i>	<i>Average</i>
Speak:		✓	
Read:		✓	
Write:		✓	

What other languages are you proficient in?

INSTITUTION

Name and full address of permanent institution:

University of Qatar

Tel. no.: *89 2139*

Telefax:

Telex:

E-mail: *Fos@qu.edu.qa*

City: *Doha*

Country: *Qatar*

Post code: *2713*

Field of activity of your institute or organization:

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

08 '98 MON 13:55 FAX 3P 40 8228122

ICS UNIDO

40008

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

Have you participated in ICS activities in the past?
If yes, which?

Yes No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

REFERENCES:

If requires the name and address of three referees in support of your application

Name	Position held	Address
1. Prof. Ibrahim Al-naimi	President - University of Qatar	Doha - Qatar - P.O. Box 2713
2. Dr. Abdullatif Al-Kubaisi	Dean of Science	
3. Dr. Qadrii Ahmad Ali	Head of Physics	

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Signature of candidate

Date

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? **Arabic**

Knowledge of English:

	Excellent	Good	Average
Speak:			✓
Read:		✓	
Write:			✓

What other languages are you proficient in? **Russian**

INSTITUTION

Name and full address of permanent institution:

**Physics Department
College of Science, Kufa Univ.**

City: **Najef**

Country: **IRAQ**

Post code:

Tel. no.:

Telefax:

Telex:

E-mail:

Field of activity of your institute or organization: **Lecturer**

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Lecturer and Head of Department

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
Lecturer	1990 - 1998	Teaching and Research	
Head of Department	1996 - 1998		

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Awards/scholarships: **Non**

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

Non.



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form:
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571898

A recent photograph
of the candidate
should be
attached here,
signed legibly
on the reverse

— Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:
Application of LASER in
Environment.

SURNAME: Abbed First name: Hussain Middle name(s): Hamad Maiden name (for women):

Place of birth: (city and country) Najef - IRAQ Present nationality: IRAQI Date of birth: (day - month - year) 1/7/1954

Male Female Marital status: married

Home address: University of Kufa Tel. no.:
City: Najef Fax no.:
Country: IRAQ Post code: E-mail:

Name and address of person to notify in case of emergency
Name: Dr. Akeel A. Y. Relationship: Friend Tel. no.:
Address: University of Kufa

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
<u>University state of Moscow</u>	<u>Russia</u>	<u>nuclear physics</u>	<u>3 years</u>	<u>Ph.D.</u>

Subject of specialization: nuclear physics

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

None

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

None

Year

Have you participated in ICS activities in the past?
If yes, which?

Yes

No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

Training and to get new knowlege in the field of Application of LASER

REFERENCES:

If requires the name and address of three referees in support of your application

Name

Position held

Address

- 1.
- 2.
- 3.

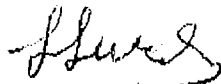
APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.


Signature of candidate

22/9/1998
Date



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS

A copy of the completed Application Form:
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729-499/571898



- Each question must be answered clearly and completely. Type or print in black ink.
- If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:

Laser Science and its Applied Technology

SURNAME: AL-SUWAIYAN First name: ABDULAZIZ Middle name(s): ABDULRAHMAN Maiden name (for women):

Place of birth: (city and country) ALKHARJ, SAUDI ARABIA Present nationality: SAUDI Date of birth: (day - month - year) 6.3.1954

Male Female Marital status:

Home address: King Fahd University of Petroleum & Minerals, KFUPM Post Box 5057, Dhahran, Saudi Arabia
Tel. no.: (966) 03-8602600
Fax no.: (966) 03-8602652
E-mail: SUWAYYAN@KFUPM.EDU.SA.
Post code: 31261

Name and address of person to notify in case of emergency

Name: Dr. S. Sowayan Relationship: Brother Tel. no.: 966-3-8646284
Address: King Faisal University

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
1. Sheffield University	England	Chemistry	1978-82	Ph.D.
2. King Fahd University	Saudi Arabia	Chemistry	1972-77	B.Sc.

Subject of specialization:

Physical Chemistry
Spectroscopy

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? Arabic

Knowledge of English:

	Excellent	Good	Average
Speak:		✓	
Read:	✓		
Write:	✓		

What other languages are you proficient in?

INSTITUTION

Name and full address of permanent institution:

King Fahd University of Petroleum & Minerals

Tel. no.: (966) 03-8602600

Telefax: (966) 03-8602652

Telex:

E-mail: SUWAYYAN@KFUPM.EDU.SA.

City: Dhahran

Country: Saudi Arabia

Post code: 31261

Field of activity of your institute or organization: University Professor, teaching and research.
Currently: Dean of the College of Sciences

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

- (1) Teaching general and physical chemistry (2) Research in the area of spectroscopy, laser spectroscopy, fast reactions (3) Dean of the College of Sciences.

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
Same organization KFUPM (King Fahd Univ.)			

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Spectroscopy of biologically important molecules (UV, IR, and Raman), molecular dynamics using picosecond laser systems.

Awards/scholarships: His Royal Highness Prince Mohammad Bin Fahd Prize for Excellent in Research (1995)

Projects/patents: US Patent # US005293213A, 1994.

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

- "Time-resolved spectroscopy of 4-hydroxy-1-naphthalenesulphonate in alcohol-water mixtures", Chem.Phys.Lett.243(1995),506.
- "Dynamics of an excited acid in 1-propanol-water mixtures", Chem.Phys.Lett.243(1995),512.
- "Evidence for excited self-complexes of 4-dimethylamonobenzonitrile in β -cyclodextrin cavities", AJSE 22, (1997), 45.
- "Effects of calcium chloride and urea on the dynamics of proton transfer of 4-hydroxy-1-naphthalenesulphonate in alcohol-water mixtures", Chem.Phys.Lett.264(1997),285.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

1. Member of Saudi Chemical Society
2. Member of the Editorial Board of the Journal of the Saudi Chemical Society

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places	Year
American Chemical Society	1996

Have you participated in ICS activities in the past? Yes No

If yes, which?

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

Industrial Applications of Lasers

REFERENCES:

If requires the name and address of three referees in support of your application

Name	Position held	Address
1. Dr. Abdulaziz Al-Dukhayil,	Rector	King Fahd University
2. Dr. Abdullah Al-Abdul-Gader	Vice Rector	King Fahd University
3. Dr. Saleh A. Bakhrebah	Vice Rector	King Fahd University

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

A. Sawayan
Signature of candidate

Oct 5, 1998
Date



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on IC

A copy of the completed Application Form :
should be sent by FAX to:
The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571898



- Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
 Training Course
 Study Tour

Please specify title of activity:

laser science & Technol-
ogy

SURNAME:	First name:	Middle name(s):	Maiden name (for women):
Mazhar	Amgad	Mohammed	
Place of birth: (city and country)	Present nationality:	Date of birth: (day - month - year)	
MOROCCO	EGYPTIAN		

Male Female Marital status:

Home address: Department of physics - King Saud University
Tel. no.:
Fax no.:

City: Riyadh 11451

Country: Saudi Arabia

Post code: 2455

E-mail:

Name and address of person to notify in case of emergency

Name: Ashraf Ahmed Mahmud Relationship: friend

Tel. no.: 002023389669

Address: 54 Labanasti, Been El Sarayat Dokki - Giza, Egypt

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
<u>Cairo University</u>	<u>Cairo</u>	<u>physics</u>	<u>4 years</u>	<u>B-Sc.</u>

Subject of specialization:

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue?

Knowledge of English:

	Excellent	Good	Average
Speak:	X		
Read:	X		
Write:	X		

What other languages are you proficient in?

INSTITUTION

Name and full address of permanent institution:

Department of physics, Faculty of Science
King Saud Univ, Saudi Arabia

Tel. no.: 9661-21676405

Telefax: 966-1-4674253

Telex:

E-mail:

City: Riyadh 11451

Country: Saudi Arabia Post code: 2455

Field of activity of your institute or organization:

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Teaching and Research in laser physics field

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
	Demonstrator	physics	Laser physics "Laser Group"

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

Auto Fluorescence of Nylon-6: Interaction of High power laser with nylon-6

2nd Euro-Mediterranean Conference on application of photobiology & laser technologies in Medicine & Environment, Cairo, Feb. 13-6, 1998

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

Association of Laser Science & Tech., Cairo, Egypt
" board member "

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Name and places	Year
winter school in laser ph. & application Cairo	1987
workshop in ~ ~ ~ ~ ~ Cairo	1988
~ ~ ~ ~ ~	1990
~ ~ ~ ~ ~	1992

Have you participated in ICS activities in the past? Yes No

If yes, which?

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

Updating my knowledge in the laser & its Technology

REFERENCES:

Requires the name and address of three referees in support of your application

Name	Position held	Address
1. prof Badr, Yehia	Dir. of Laser inst.	Cairo UNIV; national institute of laser science, Cairo Egypt
2. Prof Y.E.E. Gamal	Vice Dir. of Laser inst.	
3. Prof M. Mareh	Prof. in laser science	

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Angad Mohamed Kamal Mazhar
Signature of candidate

02-09-1998
Date

Angad



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



①

APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS

A copy of the completed Application Form :
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729-499/571898



- Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
 Training Course
 Study Tour

Please specify title of activity:

Laser Science and Techno-
logy

SURNAME: First name: Middle name(s): Maiden name (for women):
Abou - EL - Magal Ayman Mahmoud

Place of birth: (city and country) Present nationality: Date of birth: (day - month - year)
Cairo Egyptian 15-09-1961

Male Female Marital status:

Home address: Department of Physics - King Saud University
Tel. no.:
Fax no.:

City: Riyadh 11451

Country: Saudi Arabia Post code: 2155 E-mail: Elmagal@hotmail.com

Name and address of person to notify in case of emergency

Name: Abou EL-Magel, Samir Relationship: Brother Tel. no.: 00202 5127544
Address: Emam shafie ST, No. 105, Cairo, Egypt

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
<u>Cairo University</u>	<u>Cairo</u>	<u>Physics</u>	<u>4 years</u>	<u>B.Sc.</u>

Subject of specialization:

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue?

Knowledge of English:

	Excellent	Good	Average
Speak:	X		
Read:	X		
Write:	X		

What other languages are you proficient in?

INSTITUTION

Name and full address of permanent institution:

Department of physics, Faculty of science,

King Saud University

City: Riyadh 11451

Country: Saudi Arabia Post code: 2455

Tel. no. 9661-4676405

Telefax: 966-1-4674253

Telex:

E-mail: elmaghd@hotmail.com

Field of activity of your institute or organization:

Teaching, Laser Physics

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Teaching and Research in laser physics field

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
	Demonstrator	Physics	Laser physics Laser group

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

1. Presser Dependence of Electrical and Electron Temp. in Microwave Plasma,

"IEEE Transaction on Plasma. 20:257 USA (Feb. 1992)

2. Computerized thin film thickness monitor, "Laser Science & Tech, Vol. 2 No 2, 61
Cairo (1988)

3. Study of oscillating magnetized hollow cathode arcs, "Plasma Phys. Contr. Fusion
37 (1995) 589, UK

Total No of publication's (14)

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

Association of Laser Science & Tech. (Cairo, Egypt)
"bond member"

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places	Year
Winterschule in Laser Ph. & application, Cairo	1987
workshop in Laser Ph. & " "	1988
" " " " " "	1990
Laser und Plasma Physik " Germany	1992
	1993

Have you participated in ICS activities in the past? Yes No

If yes, which?

explain your reasons for wishing to participate in ICS activities and how you expect to contribute

To updating my knowledge in the laser and its technology.

REFERENCES:

requires the name and address of three referees in support of your application

Name	Position held	Address
1. Prof. Baeder, Yehya	Dir. of Inst. for laser	Cairo university, National Institut for laser sciences, Cairo, Egypt
2. Prof. Y.E.E. Gamal	Prof. in laser sciences	
3. Prof. M. Hareth	Prof. in laser sciences	

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Flyman Abou El Magd

Signature of candidate

El magd

01-09-1998

Date



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> For the latest update on ICS activities

A copy of the completed Application Form :
should be sent by FAX to:
(The original should be sent by mail)

PROF. V.R.R. GAMAL
VICE DEAN
N.I.I.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-3729499/571898



- Each question must be answered clearly and completely. Type or print in black ink.
- If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:
LASER APPLICATION
IN MEDICAL SCIENCE

SURNAME: MOHAMMED First name: KOUTHER Middle name(s): ELHAG Maiden name (for women):

Place of birth: (city and country) OMDURMAN Present nationality: SUDANESE Date of birth: (day - month - year) 5.8.1964

Male Female Marital status: MARRIED

Home address: City: KHARTOUM NORTH Country: SUDAN Post code: Tel. no.: 338461 Fax no.:

Name and address of person to notify in case of emergency
Name: BURHAN AHMED Relationship: HUSBAND Tel. no.: 551402
Address: KHARTOUM STATE WATER CORP. POST. BOX. 310

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
UNIVERSITY OF KHARTOUM	SUDAN	MEDICAL PHYSICS	1992-94	M.Sc.
" " "	"	PHYSICS	1994-89	B.Sc.

Subject of specialization:

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? **ARABIC**

Knowledge of English:

	Excellent	Good	Average
Speak:		✓	
Read:		✓	
Write:		✓	

What other languages are you proficient in?

INSTITUTION

Name and full address of permanent institution:

SUDAN UNIVERSITY OF SCIENCE & TECH.

Tel. no:

785433

Telefax:

0024911774559

Telex:

E-mail:

City: **KHARTOUM**

Country: **SUDAN**

Post code: **407**

Field of activity of your institute or organization:

SCIENCE AND TECHNOLOGY

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

TEACHING PHYSICAL SCIENCE TO DIFFERENT B.SC LEVELS AND SUPERVISING PRACTICAL WORK IN PHYSICS DEPT.

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
SUDAN UNIVERSITY	LECTURER 1993 UP TO NOW	PHYSICAL SCIENCE	TEACHING THEORETICAL AND PRACTICAL PHYSICS
UNIVERSITY OF KHARTOUM	TEACHING ASSISTANT (PART-TIME JOB)	PHYSICAL SCIENCE	TEACHING PRACTICAL PHYSICS

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

RISK OF CANCER INDUCTION TO FEMALE ORGANS

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS
Please specify your function and activity in such organization(s)

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

Have you participated in ICS activities in the past?
If yes, which?

Yes

No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

SUCH PARTICIPATION WILL ADD MUCH TO MY KNOWLEDGE
IN LASER TECHNOLOGY AND TO STAND AT THE LATEST
ACTIVITIES IN THIS FIELD AND THAT CAN BE ACHIEVED
THROUGH ATTENDING LECTURE AND INVOLVING IN DISCUSSION

REFERENCES:

It requires the name and address of three referees in support of your application

Name

Position held

Address

1. PROF. I. M. USMAN VICE-CHANCELLOR SUDAN UNIVERSITY
2. DR. A. ELTAHIR SUDAN ATOMIC AGENCY
3. DR. F. HABBANI RESEARCH DIRECTOR UNIVERSITY OF KHAR

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for:

Partial travel

Full travel

Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Kouth

Signature of candidate

Date

04/06 '98 MON 13:54 FAX 39 40 9228122

ICS UNIDO

140



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 29, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on IC

A copy of the completed Application Form;
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.B.E. GAMAL
VICE DEAN
NILES - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571898



- Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
 Training Course
 Study Tour

Please specify title of activity:

Application of Lasers in medical
Sciences (on eye, skin)

SURNAME: First name: Middle name(s): Maiden name (for women):

Dr. EL-ZALEK Basher Hassan

Place of birth: (city and country) Present nationality: Date of birth: (day - month - year)

Damascus - Syria Syrian 13 - 04 - 1951

Male Female Marital status: Married

Home address: bil. N° 9 Residence of University Tel. no.: 5425854

City: Damascus SHAGHOUR Fax no.: 00963-11-3314393

Country: SYRIA Post code: E-mail:

Name and address of person to notify in case of emergency

Name: Prof. Dr. Hassan Karouf Relationship: Colleague Tel. no.: 2129860

Address: Ministry of Higher Education - Damascus - Syria 3324296

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
University Poitiers	France	Animal's reproduction	977-978	D.E.A
"	"	Natural Science	978-984	Doctoral d'Etat

Subject of specialization: Comparative Anatomy

LANGUAGES (In most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? Arabic

Knowledge of English:

	Excellent	Good	Average
Speak:			X
Read:			X
Write:			X

What other languages are you proficient in? French

INSTITUTION

Name and full address of permanent institution:

Damascus University - Department of Zoology
Faculty of Sciences

Tel. no.: 2125796 - 2125798

Telefax:

Telex:

E-mail:

City: Damascus

Country: SYRIA

Post code:

Field of activity of your institute or organization: Prof. on Histology and Comparative anatomy
Laboratory of Histology and Biology of Cells

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

X

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
<u>Damascus University</u>	<u>1994</u>	<u>writing of the scientific book</u>	
"	<u>1995 - 1997</u>	<u>Supervision of the Master degree</u>	
"	<u>1998</u>	<u>A training course on the laser and its application.</u>	

WORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

The effects of the laser radiance (He-Ne) on the Retina of the Lizard (Lacerta laevis).

Grants/scholarships:

Books/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your recent papers (relevant to the subject of this particular activity) as well as the precise reference.

- 1 - Evolution and Origin of Life on earth, publication, Damascus Univ. 1993
- 2 - Comparative anatomy, publication Damascus Univ. 1994.
- 3 - Anatomy and physiology of the human body, To be published
- 4 - Circadian rhythms of shedding of Cone outer segment membranes. A comparative study in the third Eye and Retina of Lizard (Lacerta muradis) in EPSG newsletter Edib r.p. Peret.

the Retina of Lateral eye in vertebrata of Biology
Damascus, Univ.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

- Member of association European pineal study group 1986
- Member of " electron microscopy - French: 1982
- " " " Biology - Syrian - Damascus Univ. 1984.

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Acte final de la reunion de negociation pour l'adoption de l'accord sur la conservation des Cétacés de la mer noire, de la Méditerranée et de la 2e Atlantique adjacent Monaco ou 19 ou 24 Novembre 1996

Have you participated in ICS activities in the past? Yes No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

- Discussions of Environmental and Medical Applications.
- Acknowledge of the laser's threats.
- Presentation of the preliminary Results of mentioned Research.

REFERENCES:

If requires the name and address of three referees in support of your application

Name	Position held	Address
1. Dr. Khaled Akeel	Director of laser's Researches	Faculty of Science, Damascus Un
2. Dr. Mohiddine Issa	Deputy of Higher Education Minister	2129867 } Ministry of
3. Dr. Hassan Kharouf	Director of Scientific Research	Department 2129866 } Higher Educat

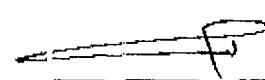
APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.


Signature of candidate

19-9-1998
Date

أنا استاذ في قسم الهندسة الكهربائية في كلية العلوم جامعة البعث

4:05 '98 MON 13:55 FAX 30 40 0228122

ICS UNIDO

1008

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

president of scientific research in Elec. Eng. faculty

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places	Year
33 th and 37 th scientific weeks in Syria	94-1997
Scientific visit to England	1994

Have you participated in ICS activities in the past? Yes No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

Because we are very interested and have research about Laser in communication

REFERENCES:

IC requires the name and address of three referees in support of your application

Name	Position held	Address
1. Ali Shems ELDin	professor	faculty of science - AL Bath University
2. S. Waleed	Dr.	" " "
3. Nadem Soeman	professor	faculty of Electrical Engineering, AL Bath U.

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Signature of candidate

15-9-98 Date

04/05 '98 MON 13:54 FAX 39 49 9229122

ICS UNIDO



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS.

A copy of the completed Application Form:
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571698

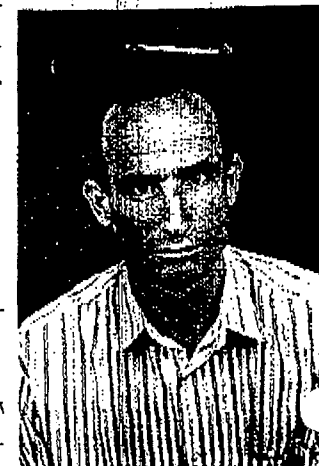
— Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
 Training Course
 Study Tour

Please specify title of activity



SURNAME: AL SALEM First name: ABDULKARIM Middle name(s): KHALIL Maiden name (for women):
Place of birth: (city and country) HOMS - Syria Present nationality: Syrian Date of birth: (day - month - year) 10 - 12 - 1961

Male Female Marital status: married

Home address:

City: HOMS

Country: Syria

Post code:

Tel. no.: 00 96331 434 745
Fax no.:

E-mail:

Name and address of person to notify in case of emergency

Name:
Address:

Relationship:

Tel. no.:

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
Communication institute	Russia	communication optic fiber	4 years	PHD

Subject of specialization:

4/05 '98 MON 13:55 FAX 30 40 9228122

ICS UNIDO

0000

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue?

Knowledge of English:

	Excellent	Good	Average
Speak:		✓	
Read:	✓		
Write:	✓		

What other languages are you proficient in?

INSTITUTION

Name and full address of permanent institution: *Al Bath University*

Tel. no:

Electrical Engineering faculty

Telex: *0096331426716*

Telex:

City: *Homs*

E-mail:

Country: *Syria*

Post code:

Field of activity of your institute or organization:

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

*present duty: president of scientific research in Elec. Eng. faculty
Lecturer of physics and communication.*

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
<i>lecturer</i>		<i>physics and Laser</i>	
<i>president of scientific research</i>	<i>since 1993</i>	<i>Electrical and electronic</i>	
<i>vice president of practical work in the faculty</i>	<i>1997-</i>	<i>Elec. Engin. work</i>	

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

number of projects in the University

Awards/scholarships:

Projects/patents:

Eng. and diploms

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

BOOK 1: physics for engineers - 1994

BOOK 2: Experiments in physics 1997

*research: 1- increasing reliability of satellite communication. 37th science week.
2- Improvement of collimator Antenna by IBM, 33th science week.*

LANGUGES (As most of the courses are conducted in english , participats should have an adequate working knowledge of that language)

What is you mother tongue?

Knowledge of english :

	Excellent	Good	Average
Speak:	✓		
Read:	✓		
Write :	✓		

What other languages are you proficient in?

INSTITUTION

Name and full address of permanent institution :

College of Medicine

University of Mosul

City :Mosul

Country : Iraq

Tel.no.: Mosul - Iraq 817033

Telefax:

Telex: 258011 MUNDRS/1K

E-mail

post code :

Field of activity of your institute or organization :

Teaching and Training

Describe your present employment duties , particulary in relation to your organization or department ,staling also any positious you hold in management or adminstration and give a brief account of your work , its highlights , your present specific reserach area

Teaching and Training fifth grade Medicial students and post graduate higher qualifications students .

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	position held and period	field of activity	Tasks and responsibilities
Collage of medicine. Mosul Teaching Hospitals .	Senior Lecturer in Ophthalmology. Head , Dept. of Ophthalmology. Consultant Ophthalmologist. 1991 , till now	Ophthalmology	Teaching and supervizing fifth grade medical students and post graduate students in Ophthalmology

RORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken

Awards / scholarship : Scholar-ship for Higher

projects /patents : Qualification in Ophthalmology

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books,articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference .

- 1- Post graduate Education in Ophthalmology/Medical Hudit. 1993
- 2- Causes of Bacterial Conjunctivitis . 1998
- 3- Ocular torticollis . 1998



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form :
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571898

A recent photograph
of the candidate
should be
attached here,
signed legibly
on the reverse

- Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
 Training Course
 Study Tour

Please specify title of activity:

lasers and applications

URNAM: First name: Middle name(s): Maiden name (for women):
Benlakhdan Zohra AKROUT

Place of birth: (city and country) Present nationality: Date of birth: (day - month - year)
TUNIS - TUNISIA TUNISIAN 12.03.43

Male Female Marital status:

Home address: 6 rue Hanoubi Jarjar

Tel. no.: 216.1.871123
Fax no.: 216.1.885073

City: TUNIS 1004

Country: TUNISIA

Post code: 1004

E-mail: Zohra.lakhda@fst.rnu.tn
Zohra.lakhda@fst.rnu.tn

Name and address of person to notify in case of emergency

Name: Benlakhdan

Relationship: husband

Tel. no.: 216.1871123

Address: TAHAR

same address

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degree
University of Paris VI	France	Atomic and molecular physics	68-71	Doctoral 3 ^e cycle
			73-78	Doctoral d'Etat

Subject of specialization:

Atomic and molecular physics - plasma physics -
Astrophysics - pollution -

FROM : PROF. DR. YEHIA BADR N. I. L. E. S PHONE NO. : 5718980

Sep. 07 1998 04:30PM P1

04/05 '98 MON 13:55 FAX 39 40 0225122 TUNIS UNIDO

4/1

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language) *Arabic - French - English*

What is your mother tongue? *arabic*

Knowledge of English:

	Excellent	Good	Average
Speak:			X
Read:			X
Write:			X

What other languages are you proficient in? *franch*

INSTITUTION

Name and full address of permanent institution:

*Faculté des sciences de TUNIS
Campus universitaire*

City: *TUNIS 1060*

Country: *TUNISIE*

Post code: *1060*

Tel. no.: *216.1.872600*

Telefax: *216.1.885073*

Telex:

E-mail:

Field of activity of your institute or organization: *Science education*

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

*Professor in physics
Director of research laboratory : structure of molecules - dynamics study*

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken: *Atoms - molecule - pollecion - ab initio potential calcul
interstellar molecule. Diode lasers - spectroscopy.*

Awards/scholarships:

Projects/patents: *Avecune projects. CMCU projects (with EU - France*

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 3 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

FROM : PROF. DR. YEHIA BADR N. I. L. E. S PHONE NO. : 5710980

Sep. 07 1998 04:32PM P1

04/05 '08 MON 13:55 FAX 30 40 0228122 ICS UNIDO

10008

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

Societe' de physique tunisienne
Societe' tunisienne d'astronomie
Islamic academy of Science
Societe' Europeenne d'optique

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places: Convention CMCU - CNRS - DAST, Avicenne, invited professor at osay university
Year: 1981 - 1998, 1992 - 95, 1992-93 october, 1994-95 all year

Did you participate in ICS activities in the past? Yes [X] No []

Yes, which? laser applications to Industry, medicine and Environment LAIME I. TUNIS

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

interaction and establish cooperation
visit of research laboratories

REFERENCES:

ICS requires the name and address of three referees in support of your application

Table with 3 columns: Name, Position held, Address. Includes names like Pr Guy TAIEB, Pr Christian Jingen, Pr E. lebouchey.

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel [] Full travel [] Living allowance []

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Signature of candidate

Tunis le 17 sept 1998
Date



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS

A copy of the completed Application Form :
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729-499/571898



— Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
 Training Course
 Study Tour

Please specify title of activity:

Laser Applications in
Communications

SURNAME: AL-YAZIDI First name: ALI Middle name(s): Ahmed Maiden name (for women):
Place of birth: (city and country) MUKALLA - YEMEN Present nationality: Yemeni Date of birth: (day - month - year) 21.03.1955

Male Female Marital status: Married

Home address: Mukalla - Hadhrmot

Tel. no.: (05) 303513
Fax no.: (05) 303513

City: MUKALLA

Country: YEMEN

Post code:

P.O.B. 50512
E-mail:

Name and address of person to notify in case of emergency

Name: FARIQ BA-AMER Relationship: FRIEND

009675 303513
Tel. no.: (05) 303513

Address:

HADHRMOT UNIVERSITY - MUKALLA - YEMEN

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
SOFIA-UNIVERSITY	BULGARIA	Electronics	1977-1983	M.Sc
SOFIA-UNIVERSITY	BULGARIA	Communication	1990-1994	Ph.D

Subject of specialization:

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? **ARABIC**

Knowledge of English:

	Excellent	Good	Average
Speak:		✓	
Read:		✓	
Write:		✓	

What other languages are you proficient in? **BULGARIEN**

009675303513

INSTITUTION

Name and full address of permanent institution:

Tel. no.: **(05) 30 3513/304522**

HADHRMOT UNIVERSITY
FACULTY OF ENGINEERING & Petroleum

Telefax: **(05) 30 3513**

Telex:

City: **MUKALLA**

P.O. Box/Anail: **50512**

Country: **YEMEN**

Post code:

Field of activity of your institute or organization:

Electronics & Communication

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Currently vice-dean of Eng. & Petroleum Faculty, a member in the college's Council & elect. and Comm. department. Additionally I give lectures in Comm. fields. My present specific research area on high speed digital communications.

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
Aden University	Academic staff member 1994-1996	Lecturer	—
Hadhrmot University	Mentioned above	Mentioned above	Mentioned above

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken: **high speed digital communications.**

Awards/scholarships: **Governmental awards.**

Projects/patents: **Supervision of M. Sc. students in field of communication**

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

- ① "Connection Control in ATM Networks", National Conf., Telecom. 92, Varna, Bulgaria, 28-30 sep. PP. 205-210, II TOM, 1992.
- ② "Application of Priority Queuing Mechanisms to ATM Multiplexing" and Traffic Control, Conf. Proc., Integrated Broad Band Commun. Networks and Services, Copenhagen, Denmark, April 20-23, 1993, PP. 33.3.1 - 33.3.10.
- ③ Внесение на Трџансакциите на източникот во мрежата. Завршен. XXIХ Научна сесия, Трџ, Сопие 1994.
- ④ Оценка на пропус. способ. на АТМ мрежа со изпр. на разпр. на Берлин, СГ. Објав. и изпр. Бр. 6, 1996.
- ⑤ Објав. и изпр. - 2, Бр. 7, 1994.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS
Please specify your function and activity in such organization(s)

Chairman of technical Committee, IEEE membership.
in Hadhramot University

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places 4th Iraq Technological Conference Year
on 21 Century techniques & Sciences, 5-6 May 1998
IRAQ, BAGHDAD

Have you participated in ICS activities in the past? Yes No
If yes, which?

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

To be acquainted with scientists, researchers and to keep a breast with new technologies. I intend to present researches in the future.

REFERENCES:

If requires the name and address of three referees in support of your application

- | Name | Position held | Address |
|-------------------------------|---------------------------------------|--|
| 1. Dr. SAAD ALSHABAN | Dean of college of Engineering | Hadhramout University of Science and Technology. |
| 2. Dr. Mudhakar A. Al-Nakeb | Dept of Electronics and Communication | |
| 3. Prof. Abdin Mohd. A/Kareem | Head of Computer Science Dept. | |

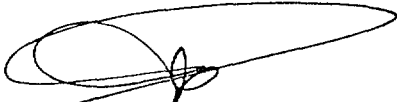
APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.


Signature of candidate



19.09.1998
Date

04/05 08 NOV 11 51 FAX 30 30 0228122

ICS UNIDO

01004



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on

A copy of the completed Application Form : PROF. Y.R.R. GAMAL
should be sent by FAX to: VICE DEAN
(the original should be sent by mail) N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729-199/571898



Each question must be answered clearly and completely. Type or print in black ink.
If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:

SAED Mustafa Yassin
SURNAME: First name: Middle name(s): Maiden name (for women):

Place of birth: (city and country) Present nationality: Date of birth: (day - month - year)
ADEN : YEMEN YeMeni 25.01.1951

Male Female Marital status:
Married

Home address: Mansora, Building No 15, Flat 252.

Tel. no.: 341024
Fax no.: 234808

City: Aden

Country: YEMEN

Post code:

10044

E-mail: CESS@Y.NET.YE

Name and address of person to notify in case of emergency

Name: Mr. H.L. Mashour ALB. : 1
Address: Mansora, Building No 22, Flat 6.
Aden, YEMEN

Tel. no.: 2111827

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
Vasil Kolarov Institute.	Bulgaria.	Horticulture.	1983-1988.	Ph.D.
Faculty of Agriculture.	YEMEN	Agriculture.	1972-1976.	BSC.

Subject of specialization:

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? Arabic.

Knowledge of English:

	Excellent	Good	Average
Speak:		✓	
Read:		✓	
Write:		✓	

What other languages are you proficient in?

Bulgarian

INSTITUTION

Name and full address of permanent institution:

Faculty of Agriculture, University of Aden.
Lahej. Alhota.

Tel. no.: 502139.

Telefax: 502155.

Telex:

E-mail: CESS@Y.NET.Ye.

Alhota.

Country: Lahej. YOMEN Post code:

10044

Field of activity of your institute or organization:

Horticulture Department

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

vice dean for student affairs, in Agriculture institute, and responsible for registration of students in the Basic Science.

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
<u>Agriculture.</u>	<u>Head of Department.</u>	<u>Horticulture.</u>	<u>vice dean for student affairs.</u>
<u>✓</u>			
<u>✓</u>			

REPORT OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

Effect of IZARFATS on Some Biological characters of onion seeds.

Effect of azot fertilizer upon Sex ratio and Quantity production of summer squash.

Effect of nitrate and phosphate fertilizers on Tomato Production.

Weed Prevention in Tomato 2 green houses.

Weed pest Control.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS
Please specify your function and activity in such organization(s)

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

- 1) Name and places: The second Arabian conference for Benefits uses of Atomic energy. Year: 5-9/11/1994. Cairo: Egypt.
- 2) 1st Arabian Symposium. "Pest weed Control". Amman. Jordan. 11-13/10/1992.

Have you participated in ICS activities in the past? Yes No

If yes, which? Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

REFERENCES:

It requires the name and address of three referees in support of your application

Name	Position held	Address
1. Dr. Ahmed. Ali. Hamadani.	Vice dean Head University	Aden University.
2. Dr. Abokul Rahman Sabri.	Director of Education affairs.	Aden University
3. Dr. Ali Masfour. Alqunid.	Centre Director CESS.	Aden University.

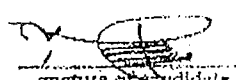
APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking will result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO/ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.


Signature of candidate

20-9-1998
Date



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed application form
should be sent by FAX to:
(The original should be sent by mail)

TRAINING COURSE ON "LASER SCIENCE
AND ITS APPLIED TECHNOLOGY"
NATIONAL INSTITUTE OF LASER
ENHANCED SCIENCES (NILES)
CAIRO, EGYPT
TEL: +20 2 5676315 FAX: +20 2 5729199
+20 2 5719980



Each question must be answered clearly and completely. Type or print in black ink.
If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Training Course on Laser Diagnostics of Combustion Processes, Trieste 1 - 5 March
 Other (please specify activity)
Winter College on Spectroscopy and Applications (8 - 26 February 1999)

SURNAME: First name: Middle name(s): Maiden name (for women):

VU THU Bich

Place of birth: (city and country) Present nationality: Date of birth: (day - month - year)

THAI NGUYEN - VIET NAM Vietnamese 03 - 02 - 1952

Male Female Marital status: Married

Home address: P4, B21, TAP THE NGOC KHANH, QUAN CAU GIAY, HANOI, VIETNAM

Tel. no.: 84 4 8355303

Fax no.:

City: HANOI

Country: VIET NAM

Post code:

E-mail: vtbleth@niles-ias.ac.vu

Name and address of person to notify in case of emergency

Name: TRAN DUC TRUNG

Relationship: husband

Tel. no.: 84 4 8355303

Address: P4, B21, TAP THE NGOC KHANH, QUAN CAU GIAY, HANOI, VIETNAM

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
*State University of Adjerbaïdjan	URSS	Molecular Physics	1970-1975	Ms.S
*Ecole Centrale de Paris	FRANCE	Spectrochemistry and Structure	1981- 1983	Doctor 3th Cycle
*Institute of Physics	VIETNAM	Physics of solid State	1987	PhD

Subject of specialization:

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)What is your mother tongue? **Vietnamese**

Knowledge of English:

	Excellent	Good	Average
Speak:		X	
Read:		X	
Write:		X	

What other languages are you proficient in? **Russian, French****INSTITUTION**

Name and full address of permanent institution:

Tel. no.: **84 4 7562017****Institute of Materials Science, CNST Vietnam****Nghiado - Tu Lien - Hanoi****Vietnam**Telefax: **84 4 8352483**

Telex:

E-mail: **vtbich@iis-lms.ac.vn**City: **HANOI**Country: **VIETNAM**

Post code:

Field of activity of your institute or organization:

Molecular Spectroscopy - Spectroscopy of solids - Laser Spectroscopy

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Professor, Senior Scientist in the research field of Molecular Spectroscopy.**PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES**

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
* Institute of Materials Science *VNDL	Prof. Senior Scientist 1993-1998	Spectroscopy of solids Molecular Spectroscopy	Researcher
* Laboratory of Physics of Liquids and Electrochemistry - University of Paris 6 (France)	Senior Scientist (Jan. - Jul. 1993 Aug. - Sep. 1995 Apr. - Mai 1997 Jul. - Sep. 1998)	Investigations of New Materials by Optics and Raman Spectroscopy	Researcher
* Department of Chemistry - University of Quebec at Montreal (Canada)	Senior Scientist (Mai - Oct. 1996)	Structural Properties of New Materials by IR S	Researcher
* Laboratory of Molecular Spectroscopy and Crystals - University of Bordeaux (France)	Senior Scientist (Jul. - Jul. 1995)	Structural Properties of New Materials by Raman Spectroscopy	Researcher

RECORD OF SCIENTIFIC ACTIVITIES

research projects undertaken:

Awards/scholarships: **Grant Research Program of TWAS**Projects/patents: **Raman and Luminescence of Solids****SCIENTIFIC PUBLICATIONS** (specify the number of your publications inc. books, articles and give the date of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.**N. Q. Huy, V. T. Bich, M. Jouan, N. Q. Dao,**Application of Partial Least-Squares Regression to Remote Quantitative Analysis by the Raman-Laser-Fiber-Optics (RLFO) Method. *Analisis*, 20(1992) 141.

M. C. Bernard, A. Hugot- Le Goff, Bich Vu Thi, S. Cordoba de Torres.

Electrochromic Reactions in Manganese Oxides. I. Raman Analysis.

Electrochem. Soc. 140(1993)3065.

B. V. T. Bich, L. Q. Minh, P. V. Huong,

Microstructure and Raman Spectra of Metallo- Phthalocyanines

Proc. of 7-APPC, Beijing, China, 19-23 August 1997.

M. C. Bernard, Vu Thi Bich, A. Hugot- Le Goff.

Resonance Raman identification of the polaronic organization in PANI"

Proc. of ICSA 98 (1998) and will be published on Synthetic Metals 1998.

Vu Thi Bich, Tran Bich Ngoc, Ngo Thi Thuan

Investigation of functionalized Y zeolites by Raman Spectroscopy

Proc. of the 5th Nat. Conf. on Chemistry, Hanoi, October, 1998

S. H. H. Hoa, V. T. Kien, G. B. Tho, N. D. Hung

Time-resolved Spectroscopy of Low-Q short Cavity Laser Emission of Dye Molecules and Some Applications

Proc. of ISP-12, 9-14 Aug., Berlin, 1998

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s) **Member of Physic Association of Vietnam**

CONVENTIONS, CONFERENCE, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

Convention between CNRS F and CNST VN

1993-1998

Have you participated in ICS activities in the past?

Yes

No

If yes, which?

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

The environmental and medicine problem are beginning pay attention in Vietnam. The development of new sensitive methods of Laser Spectroscopy for diagnostics of environmental monitoring, of combustion processes, will be very important in new research field - application of laser spectroscopy. The ICS activity will be help us to develop this field more quickly in my country.

REFERENCES

ICS requires the nomination of three referees in support of your application

Name

Position held

Institution

1. Prof. G. Denina

Univ. of University of Trieste, and ICTP

The Abdus Salam ICTP

2. Prof. P. Brechignac

Prof. of University of Paris-sud

P.O. Box 865, F-91190 Palaiseau, France
Lab. of Molecular Photophysics, Bat. 210
Univ. Paris sud, 91405 Orsay Cedex, France

3. Prof. Nguyen Dai Hung

Prof. Director of CQE

Ass. Member. of the Abdus Salam ICTP

Centre for Quantum Electronic,

Institute of Physics,

P.O.Box 429, Hanoi 10000, Hanoi, Vietnam

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important! Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses

I am requesting financial support from ICS for:

Partial travel

Full travel

Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.



VU THI BICH

28 October 1998

Signature of candidate

Date



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest updates on ICS

A copy of the completed Application Form :
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.L. GAMAL
VICE DEAN
N.I.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571893



— Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
 Training Course
 Study Tour

Please specify title of activity:

Training Course on laser science and its applied technology.

SURNAME: _____ First name: _____ Middle name(s): _____ Maiden name (for women): _____

Mohammad Ahmad A.

Place of birth: (city and country) _____ Present nationality: _____ Date of birth: (day - month - year) _____

Halhal - Westbank Jordanian 28/12/1957

Male Female Marital status: *Marrried*

Home address: *Applied Science University
Shafa badwan P.O. Box 11931*
City: *Amman*
Country: *Jordan*

Tel. no.: *962-6-5237181*
Fax no.: *5232899*

E-mail: *atwayha@go.com.jo*

Name and address of person to notify in case of emergency

Name: *Dawid Mismar* Relationship: *ate Friend*
Age: *same as above*

Tel. no.: *same as above.*

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
<i>Applied Science University</i>	<i>Jordan Amman</i>	<i>Electrical Eng.</i>	<i>—</i>	<i>Ph.D</i>

Subject of specialization:

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? Arabic

Knowledge of English:

	Excellent	Good	Average
Speak:	✓		
Read:	✓		
Write:	✓		

What other languages are you proficient in? _____

INSTITUTION

Name and full address of permanent institution:

Applied Science University

Tel. no.:

Telefax:

Telex:

E-mail:

City:

Same as on page 4

Country:

Post code:

Field of activity of your institute or organization:

Education

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Acting Dean, Faculty of Engineering [research area in Control Engineering]

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
Applied Science University	1) Assistant Prof. since 1993 - Now	Teaching Undergraduate students	Taught: Electronics I & II control I Microprocessors
	2) Dept head (EE Dept) 1996/1997		
	3) Acting Dean 1998 - Now		

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Space Shuttle Main Engine Simulation (NASA Project 1990)

Awards/scholarships: _____

Projects/patents: _____

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

See attachment please.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS
Please specify your function and activity in such organization(s)

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places	Year
ACC Control Conference / U.S.A	1991
IECON conference / U.S.A	1992
First conference on computers and Information technology Amman Jordan	1994

Have you participated in ICS activities in the past? Yes No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

Having an electrical Eng. Dept. of about 800 students it is important to us to have a good knowledge of this subject area and try to enhance our plan of study & training.

REFERENCES:

It requires the name and address of three referees in support of your application

Name	Position held	Address
1. S. Arabiat	President, Applied science university	→ Same as before
2. M. AL-Sakit	Dean, Faculty of Pharmacy	→ = = =
3. F. Tayem	Dean, Faculty of Economy	→ = = =

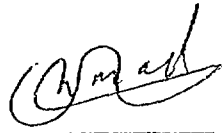
APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.



Signature of candidate

Sept. 13, 1998

Date

Under the patronage of
Prof. Farouk Ismail
President of Cairo University

ICS - UNIDO

*International Center for Science
and High Technology, ICS-UNIDO
(Trieste, Italy) and The National
Institute of Laser Enhanced
Science, Cairo University*

Organize a Training Course on
Laser Science and its Applied
Technology

9-21 Nov. 1998

Site And Date

The training course on Laser Science and its applied technology will be held at NILES, November 9-21, 1998, in the beautiful environment of Cairo University, Egypt.

Sponsorship

This meeting is jointly sponsored by the ICS-UNIDO (Trieste, Italy) and the National Institute of Laser Enhanced Science, Cairo University, Egypt.

Aim of the Course

The laser area is that most likely to dominate technology in the 21st century. This training course aims therefore at providing state-of-the-art knowledge of Lasers and its applications.

- Provide state-of-the-art knowledge of lasers and their applications in the fields of engineering and technology, medical sciences, remote sensing, environment, industry, agriculture and communication.
- Introduce students to present and prospective advances in laser applications in various research disciplines.
- Provide hands-on experience on a variety of laser sources and their accessories to Young participants involved in industry, engineering, technology and medicine, etc.
- Promote networking of relevant workers and institutions.

Who Should Attend

Laser scientists, technicians and engineers in academic institutions and industry, environmental specialists; biological scientists, R&D scientists, technologists and engineers working in industries and those involved in hygiene and agricultural applications.

The proposed period of this training course is 10 working days and will consist of:

1- Lectures

Approximately 25 hours of lectures covering the following topics will be offered to all participants:

- Basic Laser Physics
- Fundamentals of Laser Photochemistry and photobiology
- Laser based machining : methods and technology.
- Laser Applications in industry.
- Laser Applications in communications.
- Medical Applications of Laser.
- Laser Applications in Remote Sensing.
- Application of Laser in environment.
- Laser Application in Agriculture.

2- Laboratory work

20 hours laboratory sessions covering the above mentioned topics,

Lecturers

Lecturers Will Include

M.El Sayed , Gorgia Tech. U.S.A
H.El- Sayed, Old Dominion Univ. virginia ,U.S.A
Savamberg , Inst.Tech. Lund Sweden
Milano , Italy
G. Jory, Padova, Italy
Badr, Y.A. (Niles), Egypt
L. El Nadi , Faculty of Science , Egypt
Yosr, E. Gamal, (Niles), Egypt
M.H. Abdel kader, (Niles), Egypt
M.M. F. Sabry, (Niles), Egypt
A. El. Nadi, (Niles), Egypt
M.El-Batanouni, (Niles), Egypt
M. Saad, Faculty of Engineering, Egypt
H.Talaat, Ein shams Univ. Egypt.
S.H. El-Naby, (Niles), Egypt
S. Shafik, (Niles), Egypt.

Scientific Committee

Y.A.Badr (Coordinator)
L.M. El-Nadi
Y.E. Gamal
M.H. Abd-El Kader
A.M. El-Nadi
M.H. Al-Batanony
M.M. Sabry
M.S. Shafik

Mailing Information

Any information of intimation of participation should sent to the following addresses :

Professor Yahia A. Badr
National Institute of Laser Enhanced Science ,
Cairo University, Egypt.
Tel : 002025675201
Fax: 002025729499
E.mail: Ybadr@main-LSR.Cairo.cun.eg.
Professor Gallieno Denardo
International Center for Science and High
Technology (ICS-UNIDO)
AREA Science Park, Building L2, Padriciano 99,
34012 Trieste, Italy.
Tel: +39-040-9228125
Fax: +39-0040-9228122
E.mail: Varnier@sci.arca.Treste.it.

PUBLICATIONS

Ahmad A. Mohammad et al, :
NASA Technical Report, Analysis of the Space Shuttle Main
Engine Simulation, NASA Lewis Research Center, NASA Grant
NAG3-1031, Fall 1990.

'On The Simulation of The Space Shuttle Main Engine,'
IECON conf., 1990.

'Model Order Reduction of Nonlinear Systems,' IECON
conf., 1990.

'On the Simulation of Nonlinear Systems,' .Conf. on
Chaotic Systems, Oxford University, Miami, OH, 1989.

'Lyapunov equations in the continuization of linear
systems,' ACC conf., 1992.

A survey of software packages for control system design,
Technical report for Loral, Akron, OH, 1989.

'Lyapunov Equations: Review and new directions and
applications,' Accepted, Journal of Dynamics and control.

published 1994



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS

A copy of the completed Application Form :
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.I.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729-199/571898



- Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
 Training Course
 Study Tour

Please specify title of activity:

Training Course

SURNAME: Abdel-Rasouf First name: Reham Middle name(s): Sabri Maiden name (for women): —

Place of birth: (city and country) Giza, Egypt. Present nationality: A.R. Egypt. Date of birth: (day - month - year) 29-6-1972.

Male Female Marital status: Single

Home address: 19 Khatem AL Morsaline, AL Haram Tel. no.: 5852278
City: Giza. Fax no.:
Country: Egypt Post code: E-mail:

Name and address of person to notify in case of emergency

Name: Dr. Sabri Abdel-Rasouf. Relationship: Father. Tel. no.: Home/5852278
Address: Fac. Agric., Cairo University, Head of Agronomy Dept. Office/5684565

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
Cairo University, Fac. of Agriculture	Giza	Horticulture	1993	B.Sc.

Subject of specialization: Medicinal plants and Aromatic plants.

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue?

Knowledge of English:

	Excellent	Good	Average
Speak:		✓	
Read:	✓		
Write:	✓		

What other languages are you proficient in?

INSTITUTION

Name and full address of permanent institution:

Tel. no. 3371499

National Research Center (NRC).

Telefax:

Al Tahrir Str., El-Dokki.

Telex:

City: Giza

E-mail:

Country: Egypt

Post code:

Field of activity of your institute or organization:

Research Center.

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Now I hold a Researcher Assistant at the department of Medicinal and Aromatic plants, National Res. Center., Egypt.

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in each organization(s)

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places Year

Have you participated in ICS activities in the past? Yes No

If yes, which?

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

REFERENCES:

I equities the name and address of three referees in support of your application

Name	Position held	Address
1. Dr. Salah Sayed Ahmed	Head of Medicinal & Aromatic plants Dept.	NRC, Dokki.
2. Dr. Sayed Abou El-Fettouh Omar	" " " " " "	" " " " " "
3. Dr. Sabri Abd El Roouf	Head of Agronomy Dept.	Fac. Agric., Cairo Univ. Giza.

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Signature of candidate *Reham Sabri Abdel Raouf*

Date 20-10-1998



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form :
should be sent by FAX to:
The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729-499/571898



- Each question must be answered clearly and completely. Type or print in black ink.
- If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:

~~A Training Course on Laser
Science and its Applied Technology~~

SURNAME: Mansour First name: Mansour Middle name(s): Abd EL-Mgeid Maiden name (for women):

Place of birth: (city and country) Heliopolis - Egypt Present nationality: Egyptian Date of birth: (day - month - year) 25-3-1968

Male Female Marital status: Single

Home address: 15 Gaud Hosni St., EL-Azhary St.

Tel. no.: 002-02-2224398
Fax no.: 002-02-2629356

City: Shoubra EL-Khima

Country: Egypt

Post code:

E-mail: mansouram@hotmail.com

Name and address of person to notify in case of emergency

Name: Mahmoud A. Mansour Relationship: Brother

Tel. no.: 002-02-2224398

Address: 15 Gaud Hosni St., EL-Azhary St., Shoubra EL-Khima, Egypt.

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
ALAZhar Univ.	Cairo	Plasma phys.	1993-1996	M.Sc.
ALAZhar Univ.	Cairo	pre Master Studies	1992-1993	pre Master
Ain Shams Univ.	Cairo	physics	1986-1990	B.Sc.

Subject of specialization: Laser and plasma physics.

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? **Arabic**

Knowledge of English:

	Excellent	Good	Average
Speak:	✓		
Read:	✓		
Write:	✓		

What other languages are you proficient in? **NO**

INSTITUTION

Name and full address of permanent institution:

**AL-Azhar Univ., Faculty of Science, phys. Dept.
Laser and plasma Lab.**

City: **Nasr city, Cairo**

Country: **Egypt**

Post code:

Tel. no: **002-02-2629356**

Telefax: **002-02-2629356**

Telex: **—**

E-mail: **Mansouram@Frcy.eun.eg**

Field of activity of your institute or organization:

Laser and Plasma Technology.

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Now teach experimental physics for undergraduate students.

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
AL-Azhar Univ.	Demonstrator (1992-1996)	Teaching and Research on Laser and plasma physics.	
AL-Azhar Univ.	Lecturer Assist. (1996 - Now)		

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken: **A study of inductively coupled RF plasma characteristics using some Laser Diagnostics Techniques (Laser induced Fluorescence and Laser Thomson Scattering).**

Awards/scholarships:

Egyptian channel system Scholarship.

Projects/patents: **—**

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

- 1- M.A.Mansour et al, "Comparison between experimental data and theoretical prediction for plasma focus", ALAZhar Bulletin of science. vol. 6, no. 1, June 1995.
- 2- M.A.Mansour, "Investigation of plasma characteristics of a plasma source (plasma Focus Device).", M.Sc., Thesis, AL-AZhar Univ., 1996.
- 3- M.A.Mansour et al, "Systematic study of small plasma Focus Device", IAEA Technical Committee Meeting on Research Using Small Fusion Devices, Nov. 11-13, 1997, Cairo, Egypt.
- 4- M.A.Mansour et al, "Analysis of plasma Dynamics in a Linear Z-pinch using spectroscopic Technique", IAEA Technical Committee Meeting on Research Using small Fusion Devices, Nov. 11-13, 1997, Cairo, Egypt.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

- 1. Autmun College on plasma physics. 13 Oct. - 7 Nov. 1997
- 2. I.C.T.P., Trieste, Italy
IAEA Technical Committee Meeting on Research Using Small Fusion Devices, Cairo, Egypt. Nov. 11-13, 1997

Have you participated in ICS activities in the past?
If yes, which?

Yes No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

To promote my experience in Laser physics and plasma technology.

REFERENCES:

I require the name and address of three referees in support of your application

Name	Position held	Address
1. A.A. Garamoon	Head of phys. Dept., and prof. of plasma phys.,	AL-AZHAR UNIV.
2. F.F. Alaksherr	Prof. of plasma phys.	Dept. of phys., AL-AZHAR UNIV.
3. W. Sharkawy	Prof. of plasma phys.	Dept. of phys., AL-AZHAR UNIV.

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

M. A. Mansour

Signature of candidate

14-10-1998

Date



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form:
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.L.B. GAMAL
VICE DEAN
N.I.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729-199/571898

A recent photograph
of the candidate
should be
attached here,
signed legibly
on the reverse

- Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
 Training Course
 Study Tour

Please specify title of activity:

Workshop

JRNAME:

First name:

Middle name(s):

Maiden name (for women):

Helmy Zeinab Mohamed

Place of birth: (city and country)

Present nationality:

Date of birth: (day - month - year)

Cairo - Egypt

Egyptian

25/2/1957

Male

Female

Marital status:

Singl

Home address:

3, Elmakias St, Elroadz.

Tel. no.: 364226

Fax no.:

City: Cairo

Country: Egypt

Post code:

E-mail:

Name and address of person to notify in case of emergency

Name: Yasser M. Helmy Relationship: brother

Tel. no.:

3, Elmakias St, Elroadz, Cairo

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
Cairo University	Cairo	Physical Therapy	74-78	B.Sc. P.T
" "	"	P.T. Internal	82-87	M.Sc. P.T
" "	"	Medicine	90-95	Ph.D. P.T

Subject of specialization:

Rehabilitation of cardiac patients
Rehabilitation of chest patients

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? *Arabic*

Knowledge of English:

	Excellent	Good	Average
Speak:		✓	
Read:	✓		
Write:	✓		

What other languages are you proficient in?

INSTITUTION

Name and full address of permanent institution:

*Faculty of Physical Therapy
Cairo Univ.*

Tel. no.: *5687950*

Telefax: *5687940*

Telex:

E-mail:

City: *Cairo*

Country: *Egypt*

Post code:

Field of activity of your institute or organization: *LILT for ischemic heart disease & its role in cardiac rehabilitation*

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Lecturer of P.T., Demonstration clinically in Cardiopulmonary Rehabilitation

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
<i>Faculty of Physical Therapy</i>	<i>Demonstrator - Internal Med.</i>	<i>Cardiopulmonary P.T & Rehab. LILT in I.H.D</i>	
	<i>Ass. Lecturer</i>		
	<i>Lecturer</i>		
	<i>Research adviser</i>		

WORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Low intensity laser therapy for ischemic heart disease

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

- 1 - Cardiac Arrhythmias During Conditioning Exercise Program in Postoperative Management of Cardiac Patients, NEJM, 1996; 14 (3): 64-70.*
- 2 - Effect of conditioning program on physical ability of cardiac patients after valvular operation. JESCTS, 1996, 14 (4): 67-68.*

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

- Middle East Association of Alternative treatment
- Egyptian Society of Cardiology
- W.G of Preventitive & Rehabilitative Cardiology,

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places - Evaluation of Cardio-Pulmonary Year 97
Function. Kasser Eleni

- Assessment of Cardiopulmonary fitness 98

Have you participated in ICS activities in the past? Yes No
If yes, which?

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

- To get experience in LLT and understanding its biological effects.

REFERENCES:

I requires the name and address of three referees in support of your application

Name	Position held	Address
1. Prof. Dr. Yhia Bdr	Dean of ICS	Cairo Univ.
2. Prof. Dr. Emam ElNagy	Dean of Faculty of P.T	
3. Prof. Dr. Nagwa Bdr	Chair of P.T. Internal Dept.	

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Signature of candidate

Zainab Mohamed Helwan

Date

11 / 10 / 1998



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 92, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form:
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.H. GAMAL,
VICE DEAN
N.I.I.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729-199/571898

A recent photograph
of the candidate
should be
attached here,
signed legibly
on the reverse

--- Each question must be answered clearly and completely. Type or print in black ink.
--- If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:
Applications of Laser in the
environmental Research

SURNAME: Yousef First name: Yaser Middle name(s): Ahmad Maiden name (for women):

Place of birth: (city and country) Atara / Jordan Present nationality: Jordanian Date of birth: (day - month - year) 25/2/1956

Male Female Marital status:

Home address: Yarmouk University Housing

Tel. no.: 27100847
Fax no.: 2-274725

City: Irbid

Country: Jordan

Post code:

E-mail: yaserhaj@hotmail.com

Name and address of person to notify in case of emergency

Name: Ahmad Yousef Address:

Relationship: Father

Tel. no.: 06-4720315

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended
Please see attached C.V.

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
Kuwait University	Kuwait	Physics	1975-1980	B.Sc
Paris VI University	France	Physical Chemistry	1987-1992	Ph.D

Subject of specialization:

High resolution laser spectroscopy and shpolskii matrix.

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? Arabic

Knowledge of English:

	Excellent	Good	Average
Speak:	X		
Read:	X		
Write:	X		

What other languages are you proficient in? French and Greek

INSTITUTION

Name and full address of permanent institution:

Tel. no.: 271100 / Ext 2814

Telefax: 274725

Telex:

E-mail: yaserhaj@hotmail.com

Yarmouk University

City: Irbid

Country: Jordan

Post code:

Field of activity of your institute or organization:

Teaching and Research in the field of Chemistry

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Teaching + Directing research in the laser spectroscopy Laboratory.

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Please see attached. C.V.

Name of employer	Position held and period	Field of activity	Tasks and responsibilities

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Study of the photodegradation of pesticides

Fellowships/scholarships:

Conferences:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most important papers (relevant to the subject of this particular activity) as well as the precise reference.

Please see attached. C.V.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in each organization(s)

Please see attached C.V

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

Have you participated in ICS activities in the past?
If yes, which?

Yes No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

Gaining More experience in the Applications of lasers in the field of environmental research.

REFERENCES:

It requires the name and address of three referees in support of your application

Name

Position held

Address

- 1. Prof. M.E. Abuzeid Professor of Physics Al-Ein University U.A.E.
- 2. Prof. T.S. Akasheh Dean of Scientific Research Al-Hashemite University
- 3. Prof. J. Maruani Director of research CNRS France

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Signature of candidate

Date

28-9-1978



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form : PROF. Y.E.E. GAMAL
should be sent by FAX to: VICE DEAN
(The original should be sent by mail) N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729-199/571898



— Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
 Training Course
 Study Tour

Please specify title of activity:
A training Course on Laser Science
and its Applied Technology

SURNAME: El-Batahgy First name: Abdel-Mqnem Middle name(s): Mohamed Maiden name (for women):

Place of birth: (city and country) Tanta Egypt Present nationality: Egyptian Date of birth: (day - month - year) 2-4-1955

Male Female Marital status: Married

Home address:

City: Cairo - 15 May

County: Egypt

Post code: 5-W-2-4

Tel. no.: +20-2-5506337

Fax no.:

E-mail:

Name and address of person to notify in case of emergency

Name: Prof. Bahaa Zaghloul Relationship: BOSS Tel. no.: + 20-2-5010094
Address: CMRDI - P.O. Box:
87 Helwan - Cairo

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
Tokyo Ins. of Technology	Tokyo	Metallurgical Eng.	4 years	Ph.D
Cairo University	Cairo	Metallurgical Eng.	7 years	M.Sc.

Subject of specialization:

Welding Metallurgy

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? Arabic

Knowledge of English:

	Excellent	Good	Average
Speak:	✓		
Read:	✓		
Write:	✓		

What other languages are you proficient in? Japanese Language

INSTITUTION

Name and full address of permanent institution: Central Metallurgical Research and Development Institute (CMRDI)
 City: Cairo
 Country: Egypt
 Post code: 87 Helwan

Tel. no.: +20-2-5010094
 Telefax: +20-2-5011185
 Telex:
 E-mail:

Field of activity of your institute or organization:

R&D in the field of Extractive Metallurgy, Metal forming & Welding Technology

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

I'm the head of welding metallurgy laboratory at CMRDI where weldability of both ferrous and non-ferrous alloys are being studied particularly using laser welding process as a new research area at CMRDI

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
CMRDI	Head of welding metallurgy laboratory Five years	Welding metallurgy and welding technology	Management and joining of different research projects in the field of welding metallurgy and welding technology

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken: - Laser welding of Aluminum alloys
 - Laser welding of steel alloys (HSLA steels- Austenitic and duplex stainless steels)

Awards/scholarships:

Scholarships in the field of laser welding technology (4 months in Japan & 2 month in German)

Projects/patents:

National project for introducing laser technology to Egyptian industries.

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

(In a separate sheet)

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

- Member of Egyptian organization for standardization where Egyptian Standards of different fields of welding are being established.

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

(In a separate sheet)

Have you participated in ICS activities in the past?
If yes, which?

Yes

No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

Since I'm the principal investigator of a national project for introducing laser technology to Egyptian industries, I'm expecting that participating in ICS activities will provide me with more theoretical and practical knowledge concerning industrial laser applications.

REFERENCES:

I require the name and address of three referees in support of your application

Name	Position held	Address
1. Prof. Dr. Adel Nofal	Director of CMRDI	CMRDI P.O. Box: 87 Helwan , Cairo
2. Prof. Dr. Bahaa Zaghloul	Head of welding Dept.	CMRDI P.O. Box: 87 Helwan, Cairo
3. Prof. Dr. Wafaa Metwally	Prof. , welding Dept.	CMRDI P.O. Box: 87 Helwan, Cairo

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Abdel Monem El. Bahady
Signature of candidate

29-9-1998
Date

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

1. Four months scientific visit to Nagoya university and Laser X Co. in the field of fabrication of laser beam welded joints, laser cladding cutting and drilling, 1994, Japan.
2. Two months scientific visit to Fraunhofer Institut Fur Werkstof Mechanik in the field of testing, assessment and evaluation of laser beam welded joints, 1998, Germany.
3. Nine months training course in the field of welding technology, 1985, Japan.
4. Participation in organizing and conducting seminars in the field of welding metallurgy and welding technology for Egyptian, Arab and African engineers from different industrial sectors, 1990 - 1998, Egypt.
5. Participating in conducting seminar in the field of plant maintenance for Egyptian engineers from different industrial sectors, 1993, Egypt.
6. Presenting a paper at Arab Foundry Symposium, 7-14 December 1991, Cairo, Egypt.
7. Presenting a paper at Fifth Cairo University MDP Conference, 28-30 Dec. 1991, Egypt.
8. Submitting a paper to 6th Arab International Aluminum Conference, 11-14 December, 1993, Cairo, Egypt
9. Presenting a paper at The First International Conference on Mechanical Engineering and Industrial Production, 27-29 December, 1994, Assuit, Egypt.
10. Presenting a paper at The Six International Conference on Production Engineering, Design and Control, 15-17 February 1997, Alexandria, Egypt.
11. Presenting a paper at The Fifth International Conference on Petroleum, Mining and Metallurgical Engineering, 24-26 February 1997, Suez, Egypt.
12. Attendance of 48th, 49th and 50th Annual Assembly of IIW in Sweden-1995, Hungary-1996, and USA-1997.
13. Presenting a paper at Al-Azhar Engineering Fifth International Conference , 19-22 December 1997, Cairo, Egypt.
14. Presenting a paper at the Fifth Arab International Conference on Materials Science - "Materials and Fire" , Alexandria 22 - 25 March 1998.
15. Presenting a paper at the International Conference on Welding Engineering, Sept. 1998, Germany.

SCIENTIFIC PUBLICATIONS

25 publications in international journals. The following four papers are the most recent papers relevant to the subject training course.

1. A. El-Batahgy: "Effect of Laser Beam Welding Parameters on Fusion Zone Shape and Microstructure of Austenitic Stainless Steels", Materials Letters Journal, Vol. 32, No. 2-3 (1997), p.155-163.
2. A. El-Batahgy, M. Kutsuna, B. Zaghoul: "Comparison Between GTA and CO2 Laser Beam Welding of Duplex Stainless Steel", to be published in Materials Letters Journal, UK.
3. A. El-Batahgy: "A Study on Weldability of Zinc-Coated Steel Sheets in Lap Joint Configuration", Steel Research, 68 (1997), No. 12,
4. A. El-Batahgy, M. Kutsuna, B. Zaghoul: "CO2 Laser Beam Welding of Dissimilar Sheet Metals in Lap Joint Configuration", to be presented at 3rd International Conference On Lasers and Applications, November 1998 Cairo, Egypt.



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form :
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571898

A rec.
of
at
sig
on



- Each question must be answered clearly and completely. Type or print in black ink.
- If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:

Laser Science and its
applied technology

SURNAME: ABOU-KOURA First name: GAMAL Middle name(s): HASSAN Maiden name (for women):
Place of birth: (city and country) 15/05/61 EL-Mounfia Present nationality: Egyptain Date of birth: (day - month - year) 15/05/61

Male Female Marital status: Married

Home address: 71- EL-Mahas st.

Tel. no.: (048) 304 193 or 300751
Fax no.: —

City: Tanta

Country: Egypt

Post code: —

E-mail: —

Name and address of person to notify in case of emergency

Name: Roknia Badra Relationship: wif.
Address: 71- EL-Mahas st.
Tanta, Egypt.

Tel. no.: (040) 226045

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
<u>EL-Mounfia Univ.</u>	<u>Shiben EL-Kom</u>	<u>physics</u>	<u>1983</u>	<u>B.Sc</u>
<u>Tanta Univ.</u>	<u>Tanta</u>	<u>Theoretical physics</u>	<u>1989</u>	<u>M.Sc.</u>
<u>Swansea University</u>	<u>UK</u>	<u>Laser-plasma physics</u>	<u>1998</u>	<u>Ph.D</u>

Subject of specialization:

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue?

Knowledge of English; *English*

	<i>Excellent</i>	<i>Good</i>	<i>Average</i>
Speak:	<input checked="" type="checkbox"/>		
Read:	<input checked="" type="checkbox"/>		
Write:			<input checked="" type="checkbox"/>

What other languages are you proficient in?

INSTITUTION

Name and full address of permanent institution:

*Physics Department
Tanta University, Tanta,
Egypt*

Tel. no.: *(040) 344352*

Telefax:

Telex:

E-mail:

Country:

Post code:

Field of activity of your institute or organization:

Lecturer in Physics (Education.)

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Lecturer in Physics

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
<i>Demonstrator</i>	<i>from 1985 - 1989</i>	<i>Theoretical Physics</i>	<i>Teaching</i>
<i>Asis. Lecturer</i>	<i>from 1989 - 1993</i>	<i>" "</i>	<i>Teaching</i>
<i>Full Govern. mission</i>	<i>from 1993 - 1998 in U.K.</i>	<i>Laser-produced Physics</i>	<i>Study and research in Ph.D. Physics</i>

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

Have you participated in ICS activities in the past?
If yes, which?

Yes

No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

My field of research is Laser produced plasma. This field makes the subject of the training course, therefore, my attendance will be a great benefit for my research studies.

REFERENCES:

ICS requires the name and address of three referees in support of your application

Name

Position held

Address

1. Prof Dr. Gray Morgan Prof.
2. Prof Dr. Y.E. Gamal

Swansea University, Physics Dept.
Swansea SA2-8PP, U.K.
Mile, Carib University.

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for:

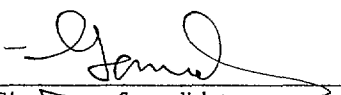
Partial travel

Full travel

Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.


Signature of candidate

20/9/98
Date



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form :
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.I.E. GAMAL
VICE DEAN
N.I.I.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729-199/571898

A recent photograph
of the candidate
should be
attached here,
signed legibly
on the reverse

- Each question must be answered clearly and completely. Type or print in black ink.
- If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:

Industrial Application of Laser

SURNAME: *Mustafa* First name: *Hashem* Middle name(s): *Rashed* Maiden name (for women):

Place of birth: (city and country) *Ei-zaiton - Egypt* Present nationality: *Egyptian* Date of birth: (day - month - year) *9/10/1988*

Male Female Marital status: *single*

Home address: *44 - AL - Ashbagh street, EL-Zaiton* Tel. no.: *2430202*
City: *Cairo* Fax no.:

Country: *Egypt* Post code: *11321* E-mail: *MHR@hotmail.com*

Name and address of person to notify in case of emergency

Name: Relationship: Tel. no.:

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
<i>Cairo University</i>	<i>NILES</i>	<i>Laser industrial App.</i>	<i>one year</i>	<i>very Good</i>
<i>National Institute of Telecom</i>	<i>Cairo</i>	<i>Exchange Engineering</i>	<i>two year</i>	<i>very Good</i>
<i>Helwan University</i>	<i>Faculty of Eng.</i>	<i>Comm. Engineering</i>	<i>five year</i>	<i>Good</i>

Subject of specialization:

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? *Arabic*

Knowledge of English:

	Excellent	Good	Average
Speak:		<input checked="" type="checkbox"/>	
Read:		<input checked="" type="checkbox"/>	
Write:		<input checked="" type="checkbox"/>	

What other languages are you proficient in?

INSTITUTION

Name and full address of permanent institution:

National Institute of Laser Enhanced Sciences

Tel. no. *5675250*

Telefax:

Telex:

E-mail:

City: *Giza*

Country: *Egypt*

Post code:

Field of activity of your institute or organization:

Industrial Applications of Laser

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities

WORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

—

—

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

—

Have you participated in ICS activities in the past?

Yes

No

If yes, which?

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

—

REFERENCES:

Requires the name and address of three referees in support of your application

Name

Position held

Address

—

—

—

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Signature of candidate: Mustafa Hassem Rasheed

Date: 17/10/1998



04/05 '08 MON 13:54 FAX JB 40 0228122

ICS UNIDO



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciana 29, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.K. GAMAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571898

A
O

- Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
 Training Course
 Study Tour

Please specify title of activity:

*Laser Science and its
applied technology*

SURNAME: First name: Middle name(s): Maiden name (for women):
SHAWABKEH AZIZ A. RAHMAN

Place of birth: (city and country) Present nationality: Date of birth: (day-month-year)

Hebron - Palestine Palestinian 8-8-56

Male Female Marital status:

Home address:

City: *Birzeit*Country: *Palestine*Post code: *14*

Tel. no.: *972-2-2957661*
Fax no.: *972-2-2957656*

E-mail: *SHAWABKA@science.
Birzeit.
edu*

Name and address of person to notify in case of emergency

Name: *Dawlat Shawabkeh* Relationship: *Wife*
Address:

Tel. no.: *972-2-2957661*

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degree
<i>University of Colorado</i>	<i>U.S.A.</i>	<i>Physics</i>	<i>1986-1990</i>	<i>Ph.D.</i>
<i>"</i>	<i>"</i>	<i>"</i>	<i>1980-1982</i>	<i>M.Sc.</i>
<i>Birzeit University</i>	<i>Palestine</i>	<i>"</i>	<i>1974-78</i>	<i>B.Sc.</i>

Subject of specialization:

laser spectroscopy of ferroelectric materials

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)What is your mother tongue? *Arabic*

Knowledge of English:

	Excellent	Good	Average
Speak:	/		
Read:	/		
Write:	/		

What other languages are you proficient in?

INSTITUTION

Name and full address of permanent institution:

*Birzeit University*Tel. no.: *972-2-2982149*Telefax: *972-2-2957656*

Telex:

E-mail: *shawabka@science.*City: *Birzeit*Country: *Palestine*Post code: *P.O. Box 14**Birzeit.
edu*

Field of activity of your institute or organization:

Education

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

*I am working as assistant professor of physics at the physics department, Birzeit University. I was a chairman for the dept for 4 years.***PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES**

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
<i>Birzeit University</i>	<i>assist. Prof of physics</i>	<i>physics</i>	<i>teaching theoretical and experimental courses for undergrad. students.</i>

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Raman spectroscopy of ferroelectric materials.

Awards/scholarships:

AMIDEAST Scholarships (twice)

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.)*see attached C.V.*

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

Palestinian Physical Society (Chairman 1997 -)

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

see attached C.V.

Have you participated in ICS activities in the past?
If yes, which?Yes No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

To broaden our knowledge of lasers and their role in modern technology.

REFERENCES:

It requires the name and address of three referees in support of your application

Name

Position held

Address

- | | | |
|----------------------|--------------------|----------------------|
| 1. Dr. E. Sader | Associate Prof. | Birzeit University |
| 2. Dr. Wael Karain | Chairman (Physics) | Birzeit University |
| 3. Dr. Henry Jagaman | Prof of Phys/cs | Bethlehem University |

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO**Important:** Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Signature of candidate

Date

17/9/1998

Aziz A. Shawabkeh*Physics Department, Birzeit University**Birzeit, West Bank, Palestine**Tel: 972-2-9982149, Fax: 972-2-957656**E-mail: Shawabka@Science.Birzeit.edu*

Professional Experience

- Birzeit University** September, 1994 to August, 1997
Birzeit, West Bank
Chairman, Physics Department
- Birzeit University** September, 1990 to present
Birzeit, West Bank
Assistant Professor of physics
- University of Colorado** September, 1986 to August, 1990
Boulder, Colorado, USA
Research Assistant
- Birzeit University** September, 1982 to August, 1986
Birzeit, West Bank
Lecturer, Physics Department
- Birzeit University** September, 1978 to August, 1980
Birzeit, West Bank
Academic Assistant

Education

- University of Colorado** 1986 to 1990
Boulder, Colorado, USA
PhD in Physics
Experimental Raman scattering from ferroelectric materials with emphasis on scattering near phase transitions. Also switching kinetics of ferroelectric thin-film memories.
- University of Colorado** 1980 to 1982
Boulder, Colorado, USA
Master in Physics
- Birzeit University** 1974 to 1978
Birzeit, West Bank
Bachelor of Physics
Diploma in Education

- 12) Workshop on Computers in Physics, 12-16 May, 1996. Yarmouk University, Irbid, Jordan.
- 13) Second Palestinian Conference on physics education, 30-31 October, 1997, Birzeit University, West Bank, Palestine.
- 14) Workshop for the Chairpersons of the physics departments in Arab Universities on using computers and multimedia in physics education, 16-19 November, 1997. Yarmouk University, Irbid, Jordan

Organizations

- 1) The Palestinian Physical Society (PPS) *October, 1997 to present*
Chairman
- 2) Al-Hurryya Housing Association *February, 1994 to present*
Chairman
- 3) Al-Mawrid (Center for teacher development) *July, 1996 to present*
On the Board of trustees
- 4) Chairman of the organizing committee of the First Palestinian Conference on Physics Education, 5 October 1995.

Personal

- 1) Born August 8th, 1956 in Hebron, West Bank, Palestine.
- 2) Married with four children.

Referees

- 1) Prof. J. F. Scott, Physics Department, University of Colorado, Boulder, CO 80309-0390, U. S. A.
- 2) Prof. Edward Sader, Physics Department, Birzeit University, Birzeit, Palestine
- 3) Prof. Henry Jaqaman, Physics Department, Bethlehem University, Palestine

Publications

- 1) Switching kinetics of Lead Zirconate Titanate submicron thin-film memories, J. F. Scott, L. Kammerdiner, M. Parris, S. Traynor, V. Ottenbacher, **A. Shawabkeh** and W. F. Oliver, *Journal of Applied Physics*, **64**, 787 (1988).
- 2) Raman spectroscopy of low temperature phases of RbAg_4I_5 , **A. Shawabkeh** and J. F. Scott, *Journal of Raman Spectroscopy*, **20**, 277 (1989).
- 3) Radiation effects on ferroelectric thin film memories: Retention failure mechanism, J. F. Scott, C. A. Araujo, H. Brett Meadows, L. D. McMillan and **A. Shawabkeh**, *Journal of Applied Physics*, **66**, 1444 (1989).
- 4) Studies of incommensurate barium sodium niobate, J. F. Scott, **A. Shawabkeh**, W. F. Oliver, A. C. Larson, and P. J. Vergamini, *Ferroelectrics*, **104**, 85 (1990).
- 5) Raman spectroscopy of incommensurate $\text{Ba}_2\text{NaNb}_5\text{O}_{15}$, **A. Shawabkeh** and J. F. Scott, *Phys. Rev. B*, **43**, 10999 (1991).

Conferences and Workshops

- 1) Winter college on atomic and molecular physics, 22 Feb.- 25 March, 1985, Trieste, Italy.
- 2) 3rd Petra school on laser physics, 2-9 September, 1985, Amman, Jordan.
- 3) International conference on Raman and luminescence spectroscopy in technology, 17-19 August, 1987, San Diego, California, USA.
- 4) March meeting of the American Physical Society, 21-25 March, 1988, New Orleans, Louisiana, USA.
- 5) International Conference on quantum electronics and laser science, 24-28 April, 1989, Baltimore, Maryland, USA.
- 6) 1st symposium on integrated ferroelectrics, 28-30 June, 1989, Colorado Springs, Colorado, USA.
- 7) First USA-USSR seminar on ferroelectricity, 9-14 July, 1989, Boulder, Colorado.
- 8) International conference on lasers in science and technology, 14-19 October, 1989, Amman, Jordan.
- 9) Second international conference on lasers in science and technology, 13-17 August, 1994, Amman, Jordan.
- 10) DAAD fellowship at the Max Plank Institute for Quantum Optics, July-August, 1995, Garching, Germany.
- 11) First Palestinian Conference on physics education, 5 October, 1995, Birzeit University, West Bank, Palestine.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS
Please specify your function and activity in such organization(s)

- 1- *Palestinian physical Society (secretary) for 3-years*
- 2- *Member.*

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places: *Keele university U.K 5-visits* Year
for a period of 3-5 weeks each

Have you participated in ICS activities in the past? Yes No

If yes, which? *The conference on low dimensional physics in Yamouk Univ Jordan*
explain your reasons for wishing to participate in ICS activities and how you expect to contribute
attend the workshop on lasers to be held

REFERENCES:

Indicate the name and address of three referees in support of your application

Name	Position held	Address
<i>Dr. Derek Laine</i>	<i>prof. of physics</i>	<i>Keele university U.K</i>
<i>Dr. A Rashid</i>	<i>Dean of science</i>	<i>Al-Quds university</i>

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Tickets should be made by individuals to reduce funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowances

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking will result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

A. M. Rashid
Signature of candidate

1. Oct 1998
Date

04/08 '08 MON 10:54 FAX 00 40 9228122

ICS UNIDU



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)

APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571898

A recent photograph of the candidate should be attached here signed and dated on the reverse

- Each question must be answered clearly and completely. Type or print in black ink.
- If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
- Training Course
- Study Tour

Please specify title of activity:

ABU-TAHA Mohammad Ibrahim
SURNAME: First name: Middle name(s): Maiden name (for women):

Hebron-palestine Palestinian 7-11-1951
Place of birth: (city and country) Present nationality: Date of birth: (day, month, year)

Male Female Marital status: married.

Home address:

City: Abu Deis
Country: Palestine

Post code: B.O. Box
20002

Tel. no.:
Fax no.: +972 2 2796960
+972 2 6277166
E-mail: abu-taha@Cst.alquds.edu

Name and address of person to notify in case of emergency:

Name: Relationship: Tel. no.:

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degree
Keele university	U.K.	Construction and frequency stabilization of CO ₂ lasers	1984-1987	Ph.D.

Subject of specialization: laser physics.

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue?

Knowledge of English:

	Excellent	Good	Average
Speak:	✓		
Read:	✓		
Write:	✓		

What other languages are you proficient in?

INSTITUTION

Full address of permanent institution:

Tel. no.: + 9722 2796961

Fax: + 9722 2796960

Telex:

E-mail: abu-taha@C66.alquds.edu

City: Abu Dis
West Bank
Country: Palestine

Post code: P.O. Box 20002

Field of activity of your institute or organization:

Describe your present employment duties, particularly in relation to your organization or department stating also my position, your management or administration and give a brief account of your work, its highlights, your present specific research area

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
Al Quods Univ.	Ass't. Prof. 1987-1997	University lecturer and Researcher	Lecturer Researcher
=	Associate Prof. 1997-until No		

FIELD OF SCIENTIFIC ACTIVITIES

Projects undertaken:

Awards/scholarships:

Projects/patents:

Patent: Frequency stabilization of CO₂ lasers, accepted in U.K, U.S.A and Canada 1990

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of min. 3 of your most recent papers (relevant to the subject of this particular activity) as well as the journal reference.

* My scientific activities include more than 17 including papers, articles, books - etc. I supervised 10 postgraduate students



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form : ICS-UNIDO SECRETARIAT
should be sent to: AREA SCIENCE PARK, BUILDING L2, PADRICIANO 99
(The original should be sent by mail) 34012 TRIESTE, ITALY
TEL: +39-40-9228-111
FAX: +39-40-9228-107 (ENVIRONMENT) - 9228-115 (CHEMISTRY) - 9228-122 (HIGHTECH & NEW MATERIALS)

- Each question must be answered clearly and completely. Type or print in black ink.
- If more space is required, attach additional pages.

ACTIVITIES

Which activity are you applying for?

- Workshop
 Training Course

Please specify title of activity:

Training course on lasers - EGYPT
9-21 Nov 1998

SURNAME: SISERIR First name: FODIL Middle name(s): Maiden name (for women):
Place of birth: (city and country) TIZI-OUZOU - ALGERIA Present nationality: ALGERIAN Date of birth: (day - month - year) 17.07.1952

Male Female Marital status: Married

Home address: 18, RUE YOUNGOURTA

Tel no.:

Fax no.:

City: ALGIERS

Country: ALGERIA

Post code: 16000

E-mail: FSISERIR@Commail.com

Name and address of person to notify in case of emergency

Name: Abdellah
Address: 21, RUE YOUNGOURTA
ALGIERS - ALGERIA

Relationship: Brother

Tel no.: 41.81.94,
72.63.56

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
USTHB	ALGIERS	ELECTRONIC	1974-1979	Engineer
ENPA	ALGIERS	"	1979-1982	Engineer

Subject of specialization: development of high power CO₂ lasers.

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? **ARABIC**

Knowledge of English:

	Excellent	Good	Average
Speak:			X
Read:		X	
Write:		X	

What other languages are you proficient in? **French**

INSTITUTION

Name and full address of permanent institution:

Tel. no.: **213.2.27.68.68**

C.D.T.A Laser Laboratory
128, Chemin Mohamed Qasem
BP 245 EL-MADANIA
 City: **ALGIERS**

Telefax: **213.2.27.59.37**

Telex:

E-mail:

Country: **ALGERIA**

Post code: **16000**

Field of activity of your institute or organization: **Research and Development**

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area **Our laboratory belong to the ionized media department. I work with the gas lasers group as an Engineer. We developpe gas lasers and Applications. My tasks consist to developpe high power CO2 lasers.**

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
C.D.T.A	Engineer October 1985 till now	Gas lasers + High power CO2 lasers	Development of gas lasers and their applications

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken: **Study, design and construction of:**

- CO2 lasers

Awards/scholarships: **- Copper Vapor laser (CVL)**

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s) ✓

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

XIII International conference on Phenomena in Ionized Gases, Toulouse, France 17-22 July 81.
 6^e Salone Internazionale delle Nuove Tecnologie e dell'Innovazione, Torino Italy
 7-11 November 1990.

Have you participated in ICS activities in the past? Yes No

If yes, which? Training course on laser and application in Industry, Medicine and environment
 Tunis - Tunisia - 10-22 Nov 1987

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

The main aim of my participation to this course is first an exchange of scientific knowledge on the state of the art of my activity such as development of high power CO₂ lasers, secondly to complete knowledge in this field in this course. My contribution is particularly technological, so I expect and hope to contribute with my experience in this field.

REFERENCES:

ICS requires the name and address of three referees in support of your application

Name	Position held	Address
1. Bessalah Hamid	Director of COTA	128, Chemin Mohamed Gacem - Algiers
2. Khelfroui Hamid	Head of laboratory	" " " "
3. Housselmel Noussa	Researcher	University of Montreal P.O. Box 6128 Station Downtown Montreal Quebec H3C

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

[Signature]
 Signature of candidate

22 Sept. 1998
 Date



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form : ICS-UNIDO SECRETARIAT
should be sent to: AREA SCIENCE PARK, BUILDING L2, PADRICIANO 99
(The original should be sent by mail) 34012 TRIESTE, ITALY
TEL: +39-0-9228-111
FAX: +39-0-9228-107 (ENVIRONMENT) - 9228-115 (CHEMISTRY) - 9228-122 (HIGHTECH & NEW MATERIALS)

- Each question must be answered clearly and completely. Type or print in black ink.
- If more space is required, attach additional pages.

ACTIVITIES

Which activity are you applying for?

- Workshop
 Training Course

Please specify title of activity:

Training course on laser, Egypt 09-21 no.

SURNAME: GHOBRIINI First name: Mourad Middle name(s): Maiden name (for women):

Place of birth: (city and country) ALGIERS ALGERIA Present nationality: Algerian Date of birth: (day - month - year) 06 - 05 - 1961

Male Female Marital status: Married

Home address: 04 Rue Colonel Bouguerra
Bordj-El-Kiffan

Tel no.: 213 2 20 36 22
Fax no.: 213 2 20 36 22

City: ALGIERS

Country: ALGERIA

Post code: 16000

E-mail: ghobrini@camail.com

Name and address of person to notify in case of emergency

Name: GHOBRIINI Djamel Relationship: Brother
Address: 04 Rue Colonel Bouguerra Bordj-El-Kiffan
ALGIERS ALGERIA

Tel. no.: 213 2 20 36 22

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
USTHB - ENP	ALGIERS	Electronics	1980 - 1986	Engineer

Subject of specialization: Electronics

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? *Arabic*

Knowledge of English:

	Excellent	Good	Average
Speak:		X	
Read:		X	
Write:		X	

What other languages are you proficient in? *French*

INSTITUTION

Name and full address of permanent institution:

Tel. no.: 213 2 27 68 68

*CDTA laboratoire des lasers et Applications
128, Chemin Mohamed Gacem BP 245 El-Madania*

Telefax: 213 2 27 59 37
27 93 93

Telex:

City: *ALGIERS*

E-mail:

Country: *ALGERIA*

Post code: *16000*

Field of activity of your institute or organization: *Research and development*

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area. *Our centre is constituted by a cybernetic department and ionised media department. Our laboratory as well as the plasma and fusion laboratory belong the so called department. Our team of research works currently on the development of lasers such as; CO₂, N₂ and CVL. My tasks within the team consist to the design and construction of electronic system of developed laser and their characterization.*

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
<i>CDTA</i>	<i>Engineer 1989 - 1993</i>	<i>Solide state lasers</i>	<i>Developement of Nd-YAG laser and application to telemetry</i>
<i>CDTA</i>	<i>Engineer 1993 till now</i>	<i>Gas laser</i>	<i>Development and construction of gas lasers such as: CO₂, N₂ and CVL.</i>

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken: *Design and construction of; Nitrogen laser, CO₂ laser and Copper vapour laser.*

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

- 1 - "A compact timing unit for two target range-finder" Meas. Scien. and Technology 1 (1990) 1111 - 1113*
- 2 - "Design and Construction of a Pockels cell driver" Meas. Scien. and Technology accepted for publication with reference: 20 of August 1993.*
- 3 - "Design and Construction of an automatic search system for power optimization of a metal vapour laser" Meas. Sci. and technology. 9 (1998) 705 - 707.*

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

- | Name and places | Year |
|---|------|
| * International Conference on Plasma Physics and Plasma Technology, Minsk BELARUS | 1997 |
| * XXIII International Conference on Phenomena in Ionised Gases, Toulouse FRANCE | 1997 |
| * The sixth European Conference on Atomic and Molecular Physics, Siena ITALY | 1998 |

Have you participated in ICS activities in the past? Yes No

If yes, which? Training course on laser and application to medicine industry and environment
Tunis, Tunisia 10-22 nov. 1997.

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

The main aim of my participation to this course is first an exchange of scientific knowledge on the state of the art of my activity (development of lasers and their application to industry and environment). Secondly to have a complement of knowledge and training in this area. My contribution is especially technological, so I can bring the experience that I have had during many years in the development of lasers and their applications.

REFERENCES:

ICS requires the name and address of three referees in support of your application

Name	Position held	Address
1. BESSIRAH Hamid	Director of CDTA	128, Chemin Mohamed Gacem Et-Madi
2. KHELIFADOU Hamid	Head of Laboratory	128, Chemin Mohamed Gacem Et-Madi
3. MOUSSELMEÛL MOUSSA	Researcher	Chemistry Department University of Mon Quebec Canada.

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

GHOBZINI MOURAD
Signature of candidate



Sept 22nd 1998
Date



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form : ICS-UNIDO SECRETARIAT
should be sent to: AREA SCIENCE PARK, BUILDING L2, PADRICIANO 99
(The original should be sent by mail) 34012 TRIESTE, ITALY
TEL: +39-40-9228-111
FAX: +39-40-9228-107 (ENVIRONMENT) - 9228-115 (CHEMISTRY) - 9228-122 (HIGHTECH & NEW MATERIALS)

- Each question must be answered clearly and completely. Type or print in black ink.
- If more space is required, attach additional pages.

ACTIVITIES

Which activity are you applying for?

- Workshop
 Training Course

Please specify title of activity:

Training course on Lasers - Egypt 9-21 nov 98

SURNAME: LOUHBI First name: Djelloul Middle name(s): Maiden name (for women):
Place of birth: (city and country) Tlemcen ALGERIA Present nationality: ALGERIAN Date of birth: (day - month - year)

Male Female Marital status: Married

Home address: Cite du 08 mai 1945
B26 - ELBOUAR

Tel no.: 213 2 61 35 68
Fax no.:

City: ALGERS

Country: ALGERIA

Post code: 16 000

E-mail:

Name and address of person to notify in case of emergency

Name: LOUHBI Abdelkader Relationship: Son
Address: Cite du 08 mai 1945 B26-ELBOUAR
ALGERS ALGERIA

Tel no.: 213 2 61 35 68

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
USTHB	ALGERS	Electronics	1975	Engineer
USTAB	ALGERS	Quantics Electronics	1982	Magister

Subject of specialization: LASER TECHNOLOGY

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? *Arabic*

Knowledge of English:

	Excellent	Good	Average
Speak:		X	
Read:		X	
Write:		X	

What other languages are you proficient in? *French*

INSTITUTION

Name and full address of permanent institution:

*CDTA Laboratoire des Lasers
128, Chemin Mohamed Gacem El-Madania*

Tel. no.: *213 2 27 68 68*

Telefax: *213 2 27 59 37*

Telex:

City: *ALGERS*

E-mail:

Country: *ALGERIA*

Post code: *16000*

Field of activity of your institute or organization:

Research and development

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area. *Our department "ionized media" is divided in; Laser laboratory, plasma laboratory and fusion laboratory. My tasks consist of supervising the different projects of my team.*

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
<i>CDTA</i>	<i>Researcher 1985 till now</i>	<i>Gas lasers</i>	<i>Head of laboratory</i>

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken: *Design and construction of: N₂ laser, CO₂ laser and Copper vapour laser*

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

- "Dynamic Optical distortions in ruby lasers" Applied Physics*
- "Design and construction of an automatic search system for power optimization of a metal vapour laser". IEEE. SA. and technology 2. 9 (1998) 705-707.*

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places	Year
1. International Conference on Plasma physics and Plasma Technology, Minsk BELARUS	1997
2. XXIII International Conference on Phenomena in Ionized Gases, Toulouse FRANCE	1997
3. The sixth European Conference on Atomic and Molecular Physics, Siena ITALY	1998

Have you participated in ICS activities in the past? Yes No If yes, which? Training Course on Laser and application to medicine industry and environment
TUNIS, TUNISIA 10-22 Nov. 1997

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

The main aim of my participation to this course is first an exchange of scientific knowledge on the art of my activity (development of lasers). Secondly to have a complement of knowledge training in this area. My contribution is especially technological, so I can bring the experience I have had during many years in the development of lasers and their application.

REFERENCES:

ICS requires: the name and address of three referees in support of your application

Name	Position held	Address
1. BESSALA Hamed	Director of CBTA	127, Chemin Mod G2cm El-Ma
2. KHELFAOUI Hamed	Head of Laboratory	"
3. MOUSSE MEL MOUSSA	Researcher	Chemistry Department University Quebec Canada.

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

Louther Djelloul
Signature of candidate

Sept 22nd 1998
Date

04/05 '98 MON 13:54 FAX 38 40 9228122

ICS UNIDO

004



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form:
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.E. GAMAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571898

A recent photograph
of the candidate
should be
attached here,
signed legibly
on the reverse

- Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for? *Training Course on Laser Science and its*

- Workshop
 Training Course
 Study Tour

Applied Technology

Please specify title of activity:

SURNAME:

First name:

Middle name(s):

Maiden name (for women):

*AL-ATTAR**HAMEED**ABDUL-WAHID*

Place of birth: (city and country)

Present nationality:

Date of birth: (day - month - year)

*Basrah / Iraq**Iraqi**18-12-1953* Male Female

Marital status:

Home address:

physics department, Al al-Bayt University

Tel. no.:

(06) 840190

Fax no.:

City:

Mafraq

Country:

Jordan

Post code:

E-mail:

Name and address of person to notify in case of emergency

Name:

Relationship:

Tel. no.:

Address:

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
<i>Basrah University</i>	<i>Iraq</i>	<i>physics</i>	<i>4 years</i>	<i>B.Sc.</i>
<i>Heriot-Watt University</i>	<i>U.K.</i>	<i>optoelectronics</i>	<i>1 year</i>	<i>M.Sc.</i>
<i>Heriot-Watt University</i>	<i>U.K.</i>	<i>optoelectronics</i>	<i>3 years</i>	<i>PH.D.</i>

Specialization:

Nonlinear optics → phase conjugation and optical bistability

4/05 '98 MON 13:55 FAX 50 40 0228122

ICS UNIDO

006

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue? *Arabic*

Knowledge of English:

	<i>Excellent</i>	<i>Good</i>	<i>Average</i>
Speak:	<input checked="" type="checkbox"/>		
Read:	<input checked="" type="checkbox"/>		
Write:	<input checked="" type="checkbox"/>		

What other languages are you proficient in?

INSTITUTION

Name and full address of permanent institution:

physics Department, Al-al Bayt University

Tel. no.:

Telefax:

Telex:

City: *Mafrag*

E-mail: *h-al-attar@hotmail.com*

Country: *Jordan*

Post code:

Field of activity of your institute or organization: *Academic College and Research activity*

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Academic Lecturer and optoelectronics Research group

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
<i>Basrah Univ.</i>	<i>Academic Lecturer 1987-1988</i>	<i>Laser physics optics</i>	<i>Teaching & supervising MSc & PhD students</i>
<i>Al-al-Bayt Univ.</i>	<i>1998 -</i>	<i>optoelectronic</i>	

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken:

Awards/scholarships:

Projects/patents:

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

Attached

4/05 '98 MON 10:55 FAX 50 40 9228122 ICS UNIDO

0006

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS
Please specify your function and activity in such organization(s)

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and place: _____ Year: _____

Have you participated in ICS activities in the past? Yes No
If yes, which?

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

I would like to participate in ICS activity to expand my knowledge in the field of laser application in medicine and optoelectronics (nonlinear optics). I will contribute to this activity by presenting a paper concerning an optical method to study the

REFERENCES:

It requires the name and address of three referees in support of your application

skin and topically applied drugs

Name	Position held	Address
1. M	Head of department	
2. H-A-MACKENZI	supervisor	physics department, Heriot-Watt Univ. U.K
3.		

APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or other activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.

[Signature]

Signature of candidate

28-9-1998

Date



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

copy of the completed Application Form :
could be sent by FAX to:
the original should be sent by mail)

PROF. Y.H.E. GAMAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571898

A recent photograph
of the candidate
should be
attached here,
signed legibly
on the reverse

Each question must be answered clearly and completely. Type or print in black ink.
If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

Workshop
Training Course
Study Tour

Please specify title of activity:

Training Course

SRNAME:	First name:	Middle name(s):	Maiden name (for women):
	Rashid	Karim	Hamid
Place of birth: (city and country)	Present nationality:	Date of birth: (day - month - year)	
Babylon, Iraq	Iraqi	1st / July 195	
<input checked="" type="radio"/> Male <input type="radio"/> Female	Marital status:	married	
Home address:	Tel. no.:		
Sadatul-Hindia	Fax no.:		
City:	E-mail:		
Babylon			
Country:	Post code:		
Iraq			
Name and address of person to notify in case of emergency			
Name:	Relationship:	Tel. no.:	
Faculty of Science	work address		
Babylon University			

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Location	Main field of study	Period	Degrees
University of St. Andrew's	U.K.	Endocrinology	1978-1984	Ph.D.

Subject of specialization:

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS
Please specify your function and activity in such organization(s)

The Iraqi biological societies

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

only those held in Iraq

Have you participated in ICS activities in the past?
If yes, which?

Yes

No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

To improve my knowledge on the latest techniques in relation to biology of animals

REFERENCES:

It requires the name and address of three referees in support of your application

Name

Position held

Address

1. Professor S. Tay-Aldin (Head of dept) Dept. of biology
2. Professor I.S. Shinawa Babylon univ.
- 3.

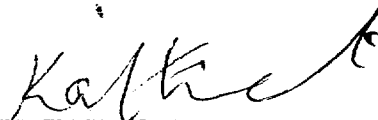
APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.


Signature of candidate

15.9.1998
Date

04/05 '98 MON 13:54 FAX 30 40 9228122

ICS UNIDO



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY
Area Science Park, Padriciano 99, 34012 Trieste (Italy)



APPLICATION FORM

visit our site on <http://www.ics.trieste.it> for the latest update on ICS activities

A copy of the completed Application Form :
should be sent by FAX to:
(The original should be sent by mail)

PROF. Y.E.H. GAMAL
VICE DEAN
N.I.L.E.S. - CAIRO UNIVERSITY
GIZA, EGYPT
FAX: +202-5729499/571898

A recent photograph
of the candidate
should be
attached here,
signed legibly
on the reverse

- Each question must be answered clearly and completely. Type or print in black ink.
— If more space is required, attach additional pages.

SCIENTIFIC ACTIVITIES

Which training activity are you applying for?

- Workshop
 Training Course
 Study Tour

Please specify title of activity:

Laser Science and its
Applied Technology

SURNAME:

First name:

Middle name(s):

Maiden name (for women):

TAMIMI AKRAM HUSNI

Place of birth: (city and country)

Present nationality:

Date of birth: (day - month - year)

HEBRON, PALESTINE, PALESTINIAN 20/5/59



Male



Female

Marital status:

MARRIED

Home address:

PO BOX 674

City: HEBRON

Country: PALESTINIAN

Post code:

TERRETORIES

972-2-222-0995/6
Tel. no.: 972-2-225-6684
Fax no.: 972-2-222-9303

E-mail: AKRA

AKRUM@PALNET.CI

Name and address of person to notify in case of emergency

Name: Hana

Relationship: WIFE

Tel. no.: 972-2-225-668

HEBRON, PALESTINE

ACADEMIC BACKGROUND (higher degrees) start with the last institution attended

Name of University (or equivalent)	Country	Field of Study	Year(s)	Degree
The University of Arizona	USA	IRRIGATION Eng.	89-95	Ph.D
TUFTS University	USA	SOIL Mechanics	84-85	MS.C
ROGER Williams Univ.	USA	Civil Engineering	80-83	BSc.

Subject of specialization: Irrigation, sewage treatments, water Quality
affect of irrigation on environment.

4/05 '98 MON 13:55 FAX 39 40 0228122

ICS UNIDO

005

LANGUAGES (As most of the courses are conducted in English, participants should have an adequate working knowledge of that language)

What is your mother tongue?

Knowledge of English:

	Excellent	Good	Average
Speak:	X		
Read:	X		
Write:	X		

What other languages are you proficient in? Arabic

INSTITUTION

Name and full address of permanent institution:

~~HEBRON UNIVERSITY~~
College of Agriculture

City: HEBRON

Country: PALESTINE

Post code:

Tel. no.: 972-2-222-0995/6

Telefax: 972-2-222-9303

Telex:

E-mail: akrum@Palnet.com

Field of activity of your institute or organization: Agriculture

Describe your present employment duties, particularly in relation to your organization or department, stating also any positions you hold in management or administration and give a brief account of your work, its highlights, your present specific research area

Teaching and research in soil, water and environmental issues.
Vice President, Planning & Development.

PREVIOUS EMPLOYMENTS AND RESPONSIBILITIES

Describe your past (last five years) employment activities and duties in your institution or organization

Name of employer	Position held and period	Field of activity	Tasks and responsibilities
University of Arizona (USA)	89-95	Researcher	Conducted research in modeling Irrig. systems.
DM Federal Credit Union (USA)	94-96	Vice President Technology.	Advancing CU Technology wise

RECORD OF SCIENTIFIC ACTIVITIES

Research projects undertaken: USDA research in modeling Irrigation systems.

Use of treated water for Irrigation in Hebron.

Awards/scholarships:

Bsc., Msc. and Ph.D. were paid for by scholarships due to excellent

Projects/patents: Performance in school.

Use of treated water for Irrigation.

SCIENTIFIC PUBLICATIONS (specify the number of your publications inc. books, articles and give the title of max. 5 of your most recent papers (relevant to the subject of this particular activity) as well as the precise reference.

None in this subject. But would like to see if this technology can be used by myself, and the Colleges of Science and Agriculture at Hebron University.

4/05 '98 MON 13:55 FAX 30 40 8228122

ICS UNIDO

0008

MEMBERSHIP TO SCIENTIFIC ASSOCIATIONS OR PROFESSIONAL ORGANIZATIONS

Please specify your function and activity in such organization(s)

Associate Member of American Society of Civil Engineers
Associate member of American Society of Agricultural Engineers
Member of Jordanian Engineers Association, Soil Mechanics

CONVENTIONS, CONFERENCES, SEMINARS AND SCIENTIFIC VISITS

Name and places

Year

Annual Int'l Conference of soil, Irrigation and Drainage, USA etc etc

Have you participated in ICS activities in the past?
If yes, which?

Yes No

Explain your reasons for wishing to participate in ICS activities and how you expect to contribute

Being part of the College of Agriculture and being the vice President for Planning and development, I would like to learn more about the latest Application in Technology to use it and may be apply it and do some research at my University by myself and other faculty members.

REFERENCES:

If requires the name and address of three referees in support of your application

- | Name | Position held | Address |
|----------------------|-------------------------------|-------------------------------|
| 1. Dr. Ali Amro | univ. President | PO Box 40, Hebron University. |
| 2. Dr. Ayed Mohamad | Dean, College of Agriculture. | " " " |
| 3. Dr. Marwan Sultan | Public Relations Director | P. O Box 40 Hebron |

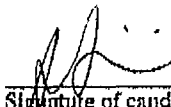
APPLICABLE ONLY FOR CANDIDATES REQUESTING FUNDS FROM ICS/UNIDO

Important: Travel and per diem grants can be available for a limited number of participants for the planned activities. Efforts should be made by individuals to raise funds from local sources to cover travel and living expenses.

I am requesting financial support from ICS for: Partial travel Full travel Living allowance

I certify that the statements made by me above are true and complete. If accepted, I undertake to refrain from engaging in any political or activities that would reflect unfavorably on the international status of ICS. I understand that any breach of this undertaking may result in the termination of the arrangements relating to my participation in the activity.

I understand that UNIDO-ICS, the local organization and the host country shall not be held liable for compensation in the event of my death, injury or illness during my trip and participation in the activity.


Signature of candidate
AKRAM TAMIMI

Sept. 23, 1998
Date

CONCLUSION

Course Evaluation

The course was found to be interesting for a large number of specialists in several fields including:

- 1-Basic sciences, Spectroscopy, Non linear optics.
- 2-Laser applications in industry, Material processing, Optimization of cutting, Drilling, Welding and Marking using ND-Yag & CO₂ Lasers, Optical communication, Holography.
- 3-Metrology, Remote sensing, Environmental and Agricultural applications of Lasers.
- 4-Biological and Medical applications of Lasers.

Large number of applications forms arrived from more than 20 countries.

The course was designed to allocate 40 participants and 6 invited professors in addition to Egyptian Staff Members of NILES and other Egyptian professors. To meet the demand of the middle east countries and the interest of several Egyptian organizations and universities the number of participants, increased to 30 international participants and about 30 Egyptians.

Moreover the number of invited professor covering the different fields was increased to be 23 in addition to about 50 Egyptian. Cairo University covered the additional costs of 10 international students and invited professors.

The first surprise we faced was the wide spectrum of the participants started from people who would like to learn something about this new technology and ending with professors, head of scientific departments and Deans of faculties. One of them was Vice-President of University, and the other was an author of textbooks in the field of mechanical applications of Lasers.

This wide spectrum made the design of the course not easy, that is why we thought that the course should start from basic aspects and principles of laser sciences and up

grade the course to end up with several advanced topics in each field in order to make the course useful and interesting to such a wide spectrum of applicants, specially, there was a 3 days meeting at "NILES" 14-16 Nov. 1998.

The training course was divided into two parts. The first part was general for the 4 groups including 15 hours devoted to the basic laser science and applications supported by "4" practical sessions each of 2.5 hrs. The second part was mainly specialized for each group and again the practical support by 4 sessions each of 2.5 hrs. Fortunately, there was a three days meeting at "NILES" in the period 14-16 Nov. 1998. All the participants were able to attend this meeting where 18 plenary lectures covering many of the recent research lines in the laser sciences as well as 80 scientific papers were presented and discussed. Move over, Group discussion was planned in this training course for specialized groups to discuss the problems facing researchers in their fields and exchange ideas and experience among the participants in each group. In addition a tour inside the "NILES" to visit our facilities and equipment's in order to plan for the future Co-operation between NILES and participants via CIS & ICTP.

Some of the experienced participants were able to present their scientific activity either by giving seminars, lectures or posters in addition to the activities of Group Discussion .

The lecturers (invited and local) and staff of "NILES" showed to be highly professional , precise and nice with the participants. The invited professors were very cooperative and showed several remarks and comments on and out of classes to student & to each others. Moreover, a questionnaire we given to students in their course package and they were asked to send their evaluation direct by to prof. Denardo, On the closing session each student was asked to evaluate the course regarding the scientific program, practical sessions., presentation organizationetc, the answers were very encouraging . The training course could be considered highly successful and well organized.

