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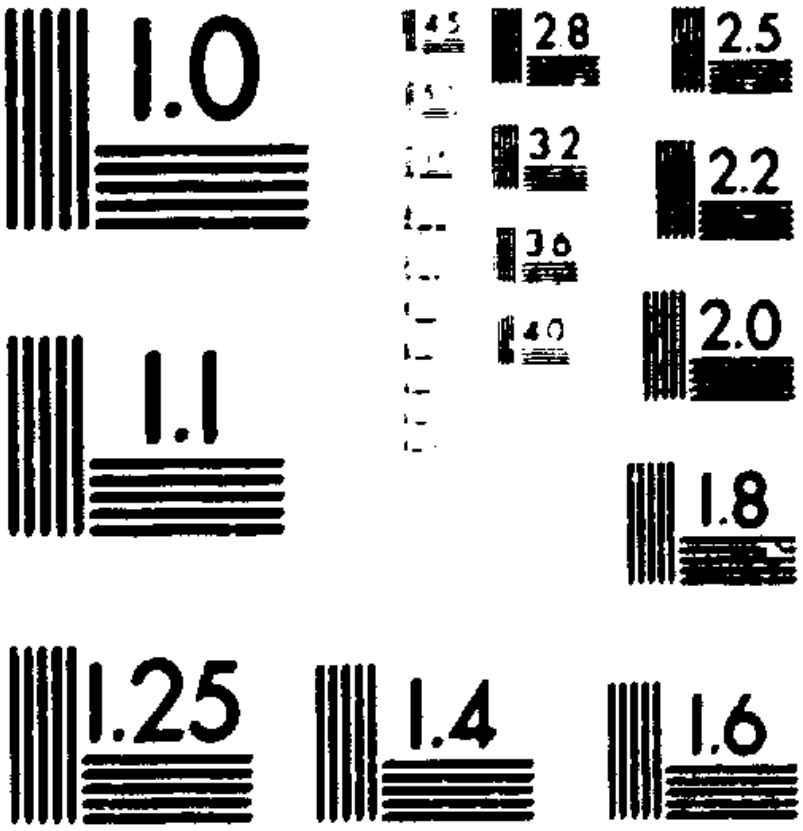
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org



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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

INTERNATIONAL CENTRE FOR SCIENCE AND HIGH TECHNOLOGY

INTERNATIONAL INSTITUTE FOR
HIGH TECHNOLOGY AND NEW MATERIALS

c/o ADRIATICO GUEST HOUSE, VIA GRIGNANO 9, 34014 TRIESTE, ITALY
TEL: 040-224572 FAX: 040-224575 TLX: 460449 APH I

FOURTH TRAINING COLLEGE ON PHYSICS AND TECHNOLOGY OF LASERS AND OPTICAL FIBRES

(18 January - 5 February 1993)

FINAL REPORT

Title:	**Fourth Training College on Physics and Technology of Lasers and Optical Fibres**
Dates:	**18 January - 5 February 1993**
Venue:	**Miramare, Trieste, Italy**
Co-sponsors:	**ICTP**
Directors:	**Prof. Gunter Huber** (University of Hamburg, Germany) **Dr. Orazio Svelto** (Istituto di Fisica del Politecnico, Milan, Italy) **Dr. C. Someda** (University of Padova, Italy) **Prof. G. Denardo, Local Organizer,** (ICTP / ICS Trieste, Italy)

The College is organized every year by the ICS consistently with the other activities on optical physics at ICS and ICTP. It is also co-sponsored by ICTP.

PURPOSE:

To expose the participants to the modern problems and theories on lasers and fibre optics and to offer them the opportunity to work on a wide variety of lasers and their applications and devices relevant to optical fibre communication systems.

TOPICS:

The main topics in the lectures programme were on:
Semiconductor Lasers: physics and applications, CO_2 lasers, short laser pulses, physics and technology of optical fibres and devices for photonics communication networks.

PROGRAMME OF LECTURES:

The programme consisted of lectures in the morning and lab. activities in the afternoon (See annex I and II). A programme of internal seminars given by the

participants was also included. (See annex Ii).
The lecture subjects were on laser physics during the first and second weeks and on fibre optics for communications in the third week.
The lab. activities consisted of demonstrations and several "hands-on" experiments. (annex IV).

LIST OF PARTICIPANTS:

From a total of 62 participants 41 were from developing countries, 16 from East European countries and 5 from industrialised countries. (See annex III)

RESULTS AND FOLLOW-UP:

The programmes of the African Network of laser Physicists were planned and discussed during the College. The activities in Africa for 1993 and 1994 were decided: The "Second International Workshop on Physics and modern applications of Lasers" will in fact take place in Harare, from 6 to 14 September 1993 and the Third International Workshop will take place in Cape Coast (Ghana) in August 1994.

The programme on optical fibres was particularly appreciated by a strong group of scientists from the Republic of Slovenia who attended the College as part of the activities of a project on fibre optics which is supported by EEC and in which ICS is a partner member.

SUGGESTIONS FOR SIMILAR OR FUTURE ACTIVITIES:

This is part of a series of Colleges that should continue.
In fact the "Fifth College on Physics and Technology of Lasers and Optical Fibres" is already proposed to take place at ICS in Trieste.

The 1993 College was followed by the ICTP Winter College on Optics which was attended by many of the participants of the Fourth Training College.

SPECIAL EVENTS:

During the College, the Sarwar Razmi Prize offered by G. Denardo to the author of the best ICTP-LAMP (Laser, Atomic and Molecular Physics) report published in 1992, was awarded to Dr. Angela Guzman from Colombia.

The participants themselves organized several evening sessions in which scientific-didactic videos on optical Physics were shown.

A questionnaire (See annex V)) was distributed to all participants in order to collect comments and suggestions for the future colleges. In the General discussion held on the last Thursday of the College many suggestions were made for future activities.

FUNDING:

Expenses for lecturers, supervisors, participants and running costs for the training in the lab were entirely covered by ICS, with a total contribution of US$90,000. The ICTP hosted the activity and offered complete secretarial support. In addition, it offered mail costs, printing of posters, bulletins and reproduction of lecture notes and all other costs.

GENERAL COMMENTS:

This type of activity is necessary for the scientific community in the developing countries. This is proved by the high number of applications: 550 requests for participation were submitted in the months of August-September-October 1992.

The laboratory activities were very much appreciated and one of the most important suggestions from the participants was to strengthen the lab training programme and to offer the participants the opportunity to carry out more experimental work and possibly small research projects.

I personally take the opportunity to acknowledge the competent work of Ms. G. De Meo and Ms. P. Passarella. I am happy to report here, only words of appreciation from the lecturers and the participants for their constant and kind collaboration.