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# **Final Report**

# **ICS-UNIDO** Forum on

"Use of Ecoplastics in China and Development and Promotion of the

Joint GREENOLYMP Project"

October 27-29, 2004, Tsinghua University, Beijing, China

UNIDO Project No.: TF/GLO/00/105 Purchase Order No.: 16000732

#### INTRODUCTION

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Due to the importance of the issue of "Use of Ecoplastics in China and Development and Promotion of the Joint GREENOLYMP Project" in China, ICS-UNIDO decided to organize the event in Beijing. China possesses rather high industrial potential with a great deal of plastics consumption and developed plastics industry. On the other h and, the k nowledge on E DPs is still r ather l imited and the applications are marginal. Therefore the region provides a large opportunity for spreading the EDPs concerning a developed industry and research organizations active in China. Furthermore, the region suffers from rather serious environmental problems among which plastic waste disposal is a closely monitored issue at present and is supposed to be even more important when of the economy the country will improve.

The event was also used for information of public on the environmental issues related to plastics. It is foreseen that the data on the advanced way of plastics waste disposal represented by EDPs will be broadly spread by newspapers and electronic media and will contribute to the awareness of public of this topic.

China has faced the challenge of population explosion and unrestricted exploitation of resources, as petroleum reserve can not match the demand, other alternative ways have to be found to tackle the resource limitation challenge during the development. In the case of China, as the largest developing country in the world, rapid economic development has created a lot of pollution and overexploitation of resources, these problems, if not resolved properly, will eventually affect the global development. In a few years from now, China will become the largest plastic consuming country in the world, therefore, policy has constantly emphasized in sustainable development and environmentally friendly materials. Among them, biodegradable plastics is the focus of governments in various levels and plastic industries. This workshop will bring together experts from oversea and domestic institutions. central government agents and provincial officers from the Environmental Departments and plastic manufacturing industries, as well as multinational companies involved in degradable plastics, to discuss the future development of the biodegradable plastics and, to exchange views on the policy to encourage the biodegradable plastic industries. The 2008 Beijing Olympics will be the target for the use of degradable plastics.

Based on the prerequisites mentioned a bove, the organization of the workshop will be held in cooperation with the Degradable Plastics Specialized Committee under the China Plastics Processing Industry Association.. Both academic and industrial institutions coming from China will participate in the event. It is a ssumed that the workshop will be held under the auspices of China Ministry of Environment Protection, 2008 Beijing Olympic Organization Committee and many other provincial organization involved in setting up plastic deposition policy. The corresponding representatives of various Ministries of China as well as local branches are supposed to be active participants taking part in discussions on various levels.

An important part of participants were from companies. The companies which are

involved in activities connected with production or processing of EDPs as well as those which would be considered to be willing to enter this area in near future were invited.

Tsinghua University is a leading University in the research on chemistry and physics of polymers. It is one of the major Universities in China and has a lot of research capacities in engineering. Tsinghua University was therefore the host of this event.

# **OBJECTIVES**

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The main proposed objectives of the seminar are defined as follows:

- To provide participants with a global outlook on the research and development of EDPs, more specifically, on the topics of recent technical achievements and various protocols for standardization and testing procedures
- To address the status of EDPs development in China
- To discuss the establishment of the requirement criteria for selection of candidate degradable plastics to be used in the 2008 Beijing Olympic game, supplied by various companies.
- To discuss ICS-UNIDO GREENOLYMP project proposal for the implementation of EDPs in the Olympic Games 2008.
- To define follow-up action plans including consortium of partners and funding schemes.

#### ORGANIZATION

The Forum on "Use of Ecoplastics in China and Development and Promotion of the Joint GREENOLYMP Project" was jointly organized by the International Center for Sciences & High Technology (ICS), United Nation Industrial Development Organization (UNIDO), Tsinghua University and Shantou University. Following bodies took responsibility for the scientific and organization of the event:

# Local Organzing Committee:

Chairman Professor George Guo-Qiang CHEN (Tsinghua Univ.)

# International Advisory Committee Members:

Stanislav MIERTUS (ICS-UNIDO) Emo CHIELLINI (Italy)

#### DATE AND SITE

Tsinghua Unisplendour International Center on the eastern gate of the Tsinghua University campus was used as conference venue from Oct. 27 to 29, 2004. The hotel provided both accommodation including full board services and conference hall equipped with projecting and audio tools.

# FUNDING

The total expenses for the organization were 13500 Euro (€).

The planned contribution from ICS-UNIDO amounted to  $10,000 \in$ . to be spent for the budget items specified in the terms of reference (i.e.: accommodation and meals of key lectures and participants, travel of key lecturers and participants, internal transport).

Table 1. The list of expenditure (in  $\in$ ) for the seminar on "Use of Ecoplastics in China and Development and Promotion of the joint GREENOLYMP Project"

ICS-UNIDO contribution	Amount (in €)				
Accommodation and meals of	Accommodation:	336.00,	Meals:		
invited Key lecturers	1954.24				
Travel of invited Key lecturers	Travel: 2140				
Contribution for travel and	Accommodation:	1868.85,	Travel:		
accommodation of national	2959.25				
participants					
Other	469.76				
Total	9728.10				

Note: 1072.54 RMB / 100 €

The other money for renting the hotel conference room and secretariat cost were paid by the organizer's own research grant.

# PARTICIPATION

In total 68 persons from 9 countries including China, Italy, USA, Japan, Germany, Canada are many multinational companies based in Beijing participated in the forum. Among them 16 from abroad and the rest domestic. Participants have been selected with the aim to cover fully the scope of the forum regarding the key lectures and to cover the participation from countries and regions where EDPs are well developed.

# 1) Lecturers (Keynote speakers)

24 keynote speakers participated in the forum. They presented 20 lectures covering the whole range of the workshop's scope. The list of the lecturers together with the topics of the lectures is given in the attached "Program and Time Schedule".

#### 2) Participants

More than 280 announcements have been sent to various institutions, companies and governmental as well as non-governmental organizations. Many participants came from the industries. They represent the EDPs industry worldwide.

Representatives from.

China State Planning Commission Ministry of Science and Technology State Environmental Protection Administration Beijing Advanced Material Development Center Beijing 2008 Olympic Game Preparative Committee United Nations Development Programme Industries Academics

They also delivered speech to support the EDP industries. More details please refer to the appendix.

#### WORKSHOP MATERIALS

Each p articipant and l ecturer o btained c onference m aterials. The A id M emoire was d istributed as electronic v ersion by e-mail. The invitation c ontaining the m ain objectives of the forum and some details on the organization was distributed by the e-mail or regular mail.

At the registration, the following materials were given to all the registered persons:

Book of abstracts plus full text in both English and Chinese translation

Final program of the forum

Office supplies

Some companies also distributed advertisement of various EDPs during the forum. At least 15 companies showed their EDP products.

#### **OPENING CEREMONY**

The opening ceremony was chaired by Professor George Guo-Qiang CHEN of Tsinghua University. Welcome speech was made by Professor Stanislav Miertus. Ms SUN Hong, Director of Dept of Environmental Protection of the Beijing 2008 Olympic Preparative Committee introduced the Green Olmpic Concept. Speech was also given by Dr. Huang Yingming, Representative of Ministry of Sciences and Technology.

#### PROGRAM

Please refer to the attached final program and time schedule for the details.

#### **RESULTS AND SUGGESTIONS FOR FOLLOW UP**

The forum was generally considered as very successful and useful by most of the participants. A friendly atmosphere and balanced program were welcomed by the participants. The forum was widely reported by the newspapers in Beijing city and this has increased the awareness of sustainable development and EDP in Beijing and the whole country. The forum is recognized by the 2008 Beijing Olympic Preparatory Committee as a n e ye o pening e vents, the r epresentative s aid that it is i mportant t o know that there are so many EDP available for selection for the game that has been designed as "GREEN OLYMPIC AND HIGH TECH OLYMPIC". Following follow-up actions will be taken:

- 1. To sign a MOU with the Beijing Olympic Committee for the commitment to use EDP.
- 2. Establish an ICS-UNIDO Committee consisting of 2008 Olympic Committee members, Tsinghua University relevant Depts in Chinese government.
- 3. Open a ICS-UNIDO office to help promote EDP for the Olympic game in 2008.
- 4. Successes of EDP application a lso r ely on w aste m anagement of EDPs. P ilot study should be conducted on separation and composting. Only after successful development of these can EDPs become truly environmentally friendly.

Other organizational expenses were:

- 1. A total of 680 Proceedings were printed and distributed not only to the participants but also to various libraries and governmental institutions with a cost of 50 RMB/copy. Totally 34,000 RMB=US\$4,121
- 2. The rental fee for the conference room over three days were 20,000 RMB=US\$2,424
- 3. Facilities including earphone, Multi-medium projectors and other services provided by the hotel were 9,500 RMB=US\$1,151

#### **Appendix I**

#### **Final Programme**

**ICS-UNIDO** Seminar on

"Use of Ecoplastics in China and Development and Promotion of the Joint GREENOLYMP Project"

October 27-29, 2004, Tsinghua University, Beijing, China

# **October 27, 2004**

17:00-19:00 Registration in the Hotel: Tsinghua Unisplendour International Center

19:30-21:00 Reception Dinner

#### October 28, 2004

#### 1. Opening Session [8:45-10:30]

1.1 Opening Ceremony (Chairman: Prof George Guo-Qiang CHEN) 8:45-9:00 Opening Remarks (George Guo-Qaing CHEN, Stanislav Miertus) 9:00-9:10 China's Environmental Protection Strategy (Representative from State **Environmental Protection Administration, China)** ICS-UNIDO Global Programme with Focus on Degradable Plastics 9:10-9:30 (S. Miertus, ICS-UNIDO) UNIDO Programmes in China (Mr. S. Miranda da Cruz, Chief 9:30-9:45 Representative of UNIDO of North-East Asia, Mr. Dimitri de Boer, Representative from UNIDO Investment Promotion Service) Sino-Italian Cooperation in Environmental Projects (Mr Roberto 9:45-9:50 Coisson, Scientific Attaché Italian Embassy in China)

1.2 Strategy of Ecoplastics Development within ICS-UNIDO Program and in China

(Chairman: Professor Stanislav Miertus)

- 9:50-10:10: Industrial Biotechnology Development Plan (Dr. HUANG Yingming and Mr. AN Daochang, Vice-Director, China Biotech Center, Ministry of Sciences and Technology)
- 10:10-10:30 2008 Beijing Olympic Game-The Green Concept and Strategy (Ms SUN Hong, Director of Green Olympic Dept of the 2008 Olympic Preparative Committee)
- 10:30-10:50 Chinese Effect in Sustainable Development of Material Industries (Dr. LI Zhizhong, China Agriculture University, representing the State Planning Committee)
- 10:50-11:15 Coffee Break

2. Degradable Plastics: Future Perspectives & Applications) [11:00-12:45] (Chairman: Professor Stanislav Miertus)

- 11:15-11:40 State-of-the-Art and future perspectives of EDPs: A Global Vision (Prof. Emo Chiellini, ICS-UNIDO)
- 11:40-12:00 Status of Plastic Waste Treatment. Recycling and EDPs Development in China (Mr. WENG Yunxuan, National Standardization Institute,

China)

12:00-12:20	ICS-UNIDO	Projects	Development:	а	Concept	(Dr.	Andrej	Krzan,
	ICS-UNIDO	)						

- 12:30-12:45 General Discussion
- 12:45-14:00 Lunch Break

3. EDPs – Industrial Offers in Production & Commercialization) [14:30-18:00] (Chairman: Professor Emo Chiellini)

- 14:00-14:20 Research, Development and Production of EDPs in China (Prof. George CHEN)
- 14:20-14:40 Cargill Dow. USA (Dr. K. Jim Jem)
- 14:40-15:00 BASF. Germany (Ms. LI Lucy)
- 15:00-15:20 Kaneka Co. Ltd (Dr. Ishii)
- 15:20-15:40 Rohm and Haas Company (Mr. Henry Hong SHEN)
- 15:40-16:00 Coffee break
- 16:00-16:20 Novamont. Italy (Mr. Daniel Ku)
- 16:20-16:40 EPI, Canada (- Oxo-biodegradable Polyolefins) (Dr. Graham Swift)
- 16:40-17:00 Mitsuibishi Chemical Group (Dr. Satoshi Kato)
- 17:00-17:20 Slowa-Highpolymers. Japan (Mr. BO Jian)
- 17:20-17:40 Mitsui Chemicals, Japan (Dr. Nobuyuki Kawashima)
- 17:40-18:00 Tianan Biologic Material Co., Ltd. China (Mr. CHEN XJ)
- 18:00-18:20 Wuhan HuaLi Environ Protection Sci Technol Co. Ltd. Or Jiangsu Nantian Group (Mr. JIN Guozhou, or Mr. MAO)

18:30 Dinner

# **October 29, 2004**

4. Standardization and Testing of EDPs [9:00-10:00] (Chairman: Dr. Andrej Krzan)

9:00-09:20 Recent developments in European standards on biodegradability and compostability (Dr. Bruno De Wilde)

9:20-9:40 Presentation by China National Standardization Bureau (Mr. WENG YX)

09:40-10:00 Discussion

10:00-10:20 Coffee Break

5. Project on the development and the use of Ecoplastics for GREENOLYMPIC [10:20-13:00]

(Chairman: George Guo-Qiang CHEN, Stanislav Miertus, Emo Chiellini)

10:20-10:50 GREENOLYMP Project Concept Introduction, A. Krzan, E. Chiellini, ICS-UNIDO,

10:50-11:10 S tatement by National Counterpart and Beijing Olympic Committe

11:10-11:30 Contribution of China Industries

11:30-11:50 Position of International Plastics Industries

11:50-12:30 Possible Funding Schemes for the Project (ICS-UNIDO – Chinese Governmental Sources – Industrial Contribution. Other Financial

Organization

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12:30-13:00 Panel discussion & proposals

13:00-14:30 Lunch Break.

14:30-16:00 Definition of Follow up action plan

16:00-16:20 Coffee Break

16:20-16:40 Recommendation & Conclusions

#### **APPENDIX II**

#### **ICS-UNIDO Seminar Participants**

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