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*Europe-China Cooperation in Green
Electronics Production Research*

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Conference Evaluation Survey Report

Analysis of questionnaires to participants at the Second International Eco-Electronics Conference in Beijing, December 6-8 2006

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VF-notat

Tittel CONFERENCE EVALUATION SURVEY REPORT: Analysis of questionnaires to participants at the Second International Eco-Electronics Conference in Beijing, December 6-8 2006	Notat nr. 3/07
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Oppdragsgjevar EU-kommisjonen (6.rammeprogram)	Emneord Grøn elektronikk (green electronics), Kina (China)
Samandrag Notatet inneheld ein analyse av resultatata frå spørjeskjema sendt ut til deltakarane på ein konferanse i Beijing 6.-8. desember 2006, og tilrådingar baserte på analysen. Evalueringa er ein del av Vestlandsforskning sitt ansvarsområde i prosjektet EC-GEPRO.	
Summary This research note contains an evaluation of participant questionnaires related to a conference in Beijing on December 6-8 2006 and a set of recommendations based on the questionnaire analysis. The study has been carried out as part of the project EC-GEPRO, for which Western Norway Research Institute functions as Project Co-ordinator.	
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Preface

This is a survey carried out as part of the EC-GEPRO project (Europe-China Cooperation in Green Electronics Production Research), a 2-year project funded by the European Commission's Sixth Framework Programme for Research and Technology Development under the theme Nanotechnologies and nano-sciences, knowledge-based multifunctional materials and new production processes and devices (NMP).

The project is coordinated by Western Norway Research Institute, and includes Shanghai University (China), Chalmers University of Technology (Sweden), the Tele- and Radio Institute of Warsaw (Poland), Loughborough University (United Kingdom), Conpart AS (Norway)

An important objective in EC-GEPRO is increasing the contact between Green Electronics actors in Europe and China. To this effect, international conferences are organised by the project, and this survey is intended to provide an evaluation of how well the first conference succeeded in achieving the project goals.

Idun Husabø Anderssen has been responsible for carrying out the survey, while Otto Andersen has been the advisor.

Sogndal, March 30, 2007
Otto Andersen

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1. Introduction

i. Background

This survey has been carried out as part of the EC-GEPRO project, a 2-year EU project within the European Union's Framework Programme 6, within the field of Green Electronic. The survey has been conducted by the Project Coordinator, Western Norway Research Institute in Sogndal, Norway on behalf of the project consortium.

ii. Objectives

One of the main objectives of the EC-GEPRO project is to generate more contact between Chinese and European research and industry actors, so as to increase the flow of know-how and stimulate new technological developments in the direction of electronics products that constitute less of an environmental hazard. As one of the ways in which EC-GEPRO seeks to facilitate increased contact, international conferences will be arranged in Europe and China. The objective of this survey is to evaluate to what extent the first conference co-arranged by EC-GEPRO (the 2nd International Eco-Electronics Conference in Beijing, December 6-8 2006) succeeded in achieving such goals, in the opinion of the participants.

iii. Method

A questionnaire was sent out via e-mail to all the participants registered for the 2nd International Eco-Electronics Conference in Beijing (Appendix 1). For this purpose, 36 e-mail addresses were obtained from the conference organisers. The same questionnaire was sent out a second time to the same group, this time with a Chinese e-mail text and a questionnaire in Chinese language (Appendix 2) in addition to the English-language e-mail text and questionnaire. The first call resulted in about 6 responses, another 4 following after the second call. This gives a response percentage of 10 out of 36, i.e. 28 per cent of the total number of individuals contacted. The respondents' questionnaires were read and analysed using qualitative methods. Appendix 3 contains basic information about the respondents.

2. Results

1. Participants

1.1. Did you get a satisfactory overview of who the participants were and their connection to Green Electronics?

Yes: 7/10

Other replies (3/10):

- I was hoping to see more participants from electronic industries and more discussion on the official requirements of China RoHS.
- As for the limit of my speciality, I was interested in the participants from Session B, Session C and Session D. The reports given by Zhongfan Zhou, Zhaogui Liu and Youliang Zhang impressed me deeply, because their topics were very relative with my research field.
- It is hard for me to say since it is the first time that I have attended this conference.

1.2. What could help you get a better overview?

- An address book of all participants would be better
- The specially invite report of 2nd International Eco-electronics Conference, especially the conference dissertation
- If more experts on reusing and recycling are invited
- Update information from internet
- More participants and increase the topics of discussion
- To meet the key persons who have influence to Legislation system of China
- The participants' well organized presentation and the well arranged conference support, such as a good translator
- More views from large OEMs
- It is hard for me to say since it is the first time that I have attended this conference.
- The proceedings and other materials about the contents of the presentation can help us to know more about it.

2. Papers

2.1. Did the presentations you attended stimulate new thinking? How?

Yes: 9/10

Yes, slightly: 1/10

Respondents' comments:

- The presentation from an expert of EU Directives gives me more updated information.
- When the professor or boss speaking, I usually thought the same way, and a new developing direction of our company flashed in my mind.
- After listened to the speech of Dr. Yoshida, I thought that EPR should be researched under the situation of China.
- Know some updated information.
- 2 step approach of China RoHS.
- Yes, I do get some new ideas from some presentations. One of them came from Dr. Zhaogui Liu's presentation, the Application of X-ray Spectrometer on RoHS Measurement. I think measurement in China will become a new and prosperous industry in the near future, so after Dr. Liu's report, I began to think what I could do in this new business.
- Yes, It made it sound easier than I think it will be! (*RoHS test house?*)

- Yes. They make me feel the trend of electronic packaging development.
- Yes. I got more information about the Chinese RoHS.

2.2. Were any Green Electronics topics not covered enough? Which ones?

Satisfied: 2/10

Not sure: 1/10

Identifies topic not covered or not covered enough: 7/10

Additional comments:

- I think standards on green electronics is also important.
- I think it's comprehensive.
- In my opinion it may be better if Electronic Recycling could be reinforced.
- WEEE recycling in China and EU.
- Most of the topics can be expanded. I would like to see more studies in academia or industries from all countries.
- Green production system, Energy Generation, Water Pollution and Prevention
- Green electronics is a very big topic and I think some topics, such as LCA assessment and manufacturing system for electronic equipments, were not covered in this conference.
- Practical experiences from large companies.

2.3. What would you like to hear more about at future conferences?

- Yes, of course (*the standards on green electronics*)
- I like more about the development and application of the electronics.
- About reusing and recycling technology of e-waste.
- Same as above. (*WEEE recycling in China and EU*).
- For the next conference, we hope to see more discussion on the local legal requirements on manufacturing, sales, and disposal of electronic products.
- Green production system for printed circuit board.
- As for me, I want to know more about reverse logistics system planning and designing outside China. I also prefer the topics on e-waste recycling.
- How large companies are going to approach this problem. (*RoHS test house?*)
- IC green packaging, electronic and electrical sets recycle activity, technology and management, Chinese RoHS and its global impact.
- The presentation of Chinese testing standards.

3. Opportunities for future collaboration

3.1. Is new international collaboration on Green Electronics a goal for you or your employer? Did this change after the conference?

Yes + no: 6/10

Yes + reinforced or strengthened: 2/10

No: 1/10

Not applicable: 1/10

Additional comment:

- Yes, I will continue to work on this research field and we have some European partners, such as TU Berlin and ITIA. I think we will continue to strengthen the relation with these European partners.

3.2. Did the conference give you any new ideas for future Sino-European collaboration? If so, what kinds of ideas?

Yes/possibly: 6/10

No: 2/10

Not applicable: 1/1. (?? I am not the participant from Europe. I must know more about both EU and China). (*Japanese*)

No response: 1/10

Additional comments:

- Yes, I think if the conference includes more corporations or companies, it must show better.
- I want to communicate with experts from Europe on disassembly of PCB and reusing of e-waste.
- There will be more communication, and we can do better in this field.
- The conference provides a platform for us to gain understanding on the official legal requirements of the Chinese government on the electronic products. We hope, through the communication provided by the conference, Chinese government also can gain understanding of the needs of the electronics industries.
- Currently, we have no more good ideas on it, but we think that Sino-European collaboration is very important. For universities, we may exchange short-term visiting students on both sides between China and Europe.

4. Obstacles to international collaboration

4.1. From the perspective of your company or organisation, what are the largest obstacles to establishing more Sino-European collaboration?

- I think the largest obstacle is lack of understanding with each other.
- To lack the opportunity of connection.
- To know each other, to acquaint myself with experts from Europe.
- To more way to know updated information will be better.
- Limited access of information (*Western*)
- For me, language is a big obstacle. The ability to communicate is very important.
- We have already started.
- The mutual understanding and a better way of understanding.

4.2. How can these obstacles be overcome?

- Attending international conferences is a way to overcome these obstacles.
- More conferences and trade connections.
- By attending international conferences.
- We can set up more links in our public e-web.
- We have an office in Shanghai which helps us to obtain the information we need. It would be helpful if the Chinese government can publish more related information on the Internet, or on the international industrial journals and magazines.
- For me, I should work hard to improve my language ability.
- There are none.
- More conferences and collaborative projects.

4.3. Apart from international conferences, what could help your company/organisation establish more Sino-European collaboration?

- Make some research project, training project on green electronics.

- Trades.
- By academic visiting or communication.
- Email and web.
- More contact with the related Chinese officials for discussion.
- Support from the government and the Sino-European Center. More communication, such as workshops, exhibitions, and visiting could help more tight understanding on both sides. Sometimes, we do want to cooperate with partners from Europe, and more consultations are needed.
- Collaborative projects.

3. Main Findings

Ten conference attendees completed and returned the questionnaire. Six of the respondents represented Chinese employers, one represented a Japanese employer and three represented a Western employer (UK, US, EU). About half of the participants represented research (universities, research institutes or think tanks), while the other half represented industry (electronics companies). Nearly all of the respondents stated an interest in green electronics, with some variation in special fields of interest.

Participants

Most of the respondents felt that they achieved a satisfactory overview of the participants at the conference (8/10).

Several suggestions as to improve participants' overview over the identity and specialities of other conference participants were presented. The most relevant suggestions included an address book including the contact details of all participants and updated information online.

In addition, the participants expressed the following, more general wishes for future conferences:

- *more participants from electronics industry and more discussion on the official requirements of China RoHS.*
- *more experts on reusing and recycling*
- *a higher number of participants*
- *more topics for discussion*
- *meeting key persons with influence in China's system of legislation*
- *a good translator*
- *more views from large OEMs*
- *companies present at the conference must be more visible*
- *Proceedings and other materials about the contents of the presentation*

Papers

All the participants stated that the presentations stimulated new thinking. The most popular topics in this respect included the following:

- *expert on EU Directives*
- *Dr. Yoshida's talk on EPR*
- *2 step approach of China RoHS*

- *Dr. Zhaogui Liu's presentation "The Application of X-ray Spectrometer on RoHS Measurement"*
- *Chinese RoHS*

Most of the respondents (8/10) still identified topics which in their opinion had not been covered or had not been covered enough, or which they would like to hear more about at future conferences. These included the following:

- *Green electronics standards*
- *Electronic Recycling*
- *WEEE recycling in China and the EU*
- *More studies in academia or industries from all countries*
- *Green production systems, Energy Generation, Water Pollution and Prevention*
- *LCA assessment and manufacturing systems for electronic equipments*
- *Practical experiences from large companies*
- *More about the development and application of electronics*
- *Reusing and recycling technology of e-waste*
- *More discussion on the local legal requirements on manufacturing, sales, and disposal of electronic products*
- *Green production system for printed circuit board*
- *Reverse logistics system planning and designing outside China*
- *E-waste recycling*
- *How large companies are going to approach the problem of RoHS*
- *IC green packaging, electronic and electrical sets recycle activity, technology and management, Chinese RoHS and its global impact.*

Opportunities for future collaboration

Almost all of the respondents represent employers with a strong interest in international collaboration. Six out of ten stated that international collaboration on GE was already a goal for their company, and another two of the ten stated that attending the conference had *reinforced or strengthened* their belief in international collaboration on Green Electronics. The remaining participants responded that this question was not applicable (1/10), and that international collaboration was currently not a goal for his company (1/10).

Five of the ten stated that the conference had provided them with new ideas for Sino-European collaboration (not sure: 1/10, not applicable:1/10, no:1/10, no reply: 1/10). Some of these ideas are listed below:

- *Yes, I think if the conference includes more corporations or companies, it must show better.*
- *I want to communicate with experts from Europe on disassembly of PCB and reusing of e-waste.*
- *There will be more communication, and we can do better in this field.*
- *The conference provides a platform for us to gain understanding on the official legal requirements of the Chinese government on the electronic products. We hope, through the communication provided by the conference, Chinese government also can gain understanding of the needs of the electronics industries.*
- *Currently, we have no more good ideas on it, but we think that Sino-European collaboration is very important. For universities, we may exchange short-term visiting students on both sides between China and Europe.*

Obstacles to international collaboration

When asked to give the largest obstacles to establishing more Sino-European collaboration, the respondents mentioned lack of understanding, language barriers, and a lack of acquaintances and contacts. One Western company (no.5) and one Chinese representative mentioned limited access to information and lack of updated information.

As means of overcoming these obstacles, respondents mentioned attending more international conferences, establishing more trade connections, setting up more online links, and improving language abilities. A Western respondent (no.5) expressed a wish for more information from the Chinese government:

“We have an office in Shanghai which helps us to obtain the information we need. It would be helpful if the Chinese government can publish more related information on the Internet, or on the international industrial journals and magazines”.

Other suggestions for overcoming collaboration obstacles included research or training projects on green electronics (collaborative projects), trade, academic exchanges and written communication (e-mail and web), direct communication (workshops, exhibitions, and visits, and consultations), more contact with the related Chinese officials for discussion, and support from the government and the Sino-European Centre.

4. Conclusions

Broad conclusions:

- Several measures could be employed to provide participants at this type of conference with a better overview of who is present. This is a wish expressed by many of the respondents.
- The respondents have several unfulfilled wishes with respect to the topics covered at the conference.
- The results of the survey indicate that the conference provided the respondents and their employers with a better understanding of the importance of international collaboration in their field, and in some cases reinforced or strengthened their interest in carrying on with such efforts.
- Several obstacles to international or Sino-European collaboration were mentioned. The respondents also listed a number of ways of overcoming these obstacles, expressing a desire for more arenas for exchange of information – also besides international conferences.

Suggested measures for implementation at future conferences :

- an address book including the contact details of all participants (Chinese)
- updated information online (Chinese)
- companies present at the conference must be more visible (Chinese)
- a higher number of participants (Chinese)
- a well-functioning translation service (European and Chinese)
- a higher number of topics for discussion (European)

- more participants from electronics industry and more discussion on the official requirements of China RoHS
- more experts on reusing and recycling
- meeting key persons with influence in China's system of legislation (Japanese)
- more views from large OEMs (European)

5. Discussion and Suggestions

There is a clear potential for increasing the level of contact between conference participants from China and Europe. It would be highly beneficial to Sino-European collaboration if the results from this survey should be considered carefully by organisers of future conferences on Green Electronics. This should preferably take place prior to the conference, so as to utilize the full potential of the survey.

The respondents' wishes regarding topics for paper presentations, names of speakers and ways of overcoming barriers – if taken into account - may help increase the general effectiveness of future conferences in generating increased Sino-European research collaboration.

Appendix 1: Questionnaire (English)

Participant Questionnaire The Second International Eco-Electronics Conference, Beijing December 7-8, 2006

EC-GEPRO (Europe-China Cooperation in Green Electronics Production Research) is an EU-funded project within Green Electronics. The project involves Chinese and European partners, and a central objective is to increase Sino-European collaboration on Green Electronics. The partners are:

- *Western Norway Research Institute (Norway)*
- *Chalmers Technical University (Sweden)*
- *Loughborough University (UK)*
- *Conpart AS (Norway)*
- *ITR - Tele and Radio Research Institute, Warsaw (Poland)*
- *Sino Swedish Micro integration Center, Shanghai University (China)*

EC-GEPRO co-organised the conference in Beijing, and a paper on the project was presented by Dr. Otto Andersen from Western Norway Research Institute. An important aspect of EC-GEPRO is to increase the contact and interaction between academic and industrial researchers in Europe and China through, for example, international conferences. It is important that the effectiveness of such conferences is evaluated.

Your input will help in improving the Sino-European collaboration on Green Electronics.

We therefore kindly ask you to reply to the questions below.

Your name:

Your employer:

Your field of interest in Green Electronics:

1. Participants

1.1. Did you get a satisfactory overview of who the participants were and their connection to Green Electronics?

1.2. What could help you get a better overview?

2. Papers

2.1. Did the presentations you attended stimulate new thinking? How?

2.2. Were any Green Electronics topics not covered enough? Which ones?

2.3. What would you like to hear more about at future conferences?

3. Opportunities for future collaboration

3.1. Is new international collaboration on Green Electronics a goal for you or your employer?
Did this change after the conference?

3.2. Did the conference give you any new ideas for future Sino-European collaboration? If so, what kinds of ideas?

4. Obstacles to international collaboration

4.1. From the perspective of your company or organisation, what are the largest obstacles to establishing more Sino-European collaboration?

4.2. How can these obstacles be overcome?

4.3. Apart from international conferences, what could help your company/organisation establish more Sino-European collaboration?

Contact person in Shanghai: Xiuzhen Lu, phone number +86-21-56331599 and e-mail shuxzl@163.com.

Please fill in your answers and return to iha@vestforsk.no before December 31st.

Thank you for your assistance!

Appendix 2: Questionnaire (Chinese)

调查问卷

第二届绿色电子国际会议

北京，2006年12月7-8日

EC-GEPRO

(中欧绿色电子产品合作研究)是一项关于绿色电子的欧盟项目。来自中国和欧洲的六个单位共同参与了此项目，本项目的目的是增进中国和欧洲在绿色电子方面的合作研究。项目的参与单位有：

- 挪威西部研究所
- 瑞典查尔默斯理工大学
- 英国拉夫堡大学
- 挪威Conpart AS公司
- 波兰华沙无线电研究所
- 中国上海大学中瑞联合微系统集成技术中心

EC-

GEPRO参与单位上海大学是这次绿色电子国际会议的协办单位，挪威西部研究所的Otto Andersen博士代表所有项目参与单位在大会上就本项目做了报告。EC-

GEPRO项目的一个重要部分是增进中国和欧洲各国学术界和工业界的专家在绿色电子产品研究方面的交流，比如：通过举办国际会议增进交流。因此，对于国际会议效应的评估对于EC-

GEPRO项目来说是非常重要的。希望您能抽出宝贵的时间填写这个调查表。感谢您支持我们的工作，同时感谢您为中 - 欧绿色电子产品的合作和交流作出的努力！

以下是这次调查表的内容，请填写：

姓名：

单位：

在绿色电子方面您感兴趣的领域和方向：

1.1. 您是否对与会人员和研究领域有一个较为满意的了解？

1.2. 什么可以帮助您更好的了解这些？

1. 关于大会的参加者

2. 关于大会文章

2.1. 您参与的报告和讨论是否对您的工作有新的启发？如果是，如何给您的启发？

2.2. 您认为是否还有其他绿色电子的讨论主题没有被这次大会涵盖？哪些？

2.3. 您希望在以后的会议上更多地听到何种主题的报告？

3. 关于未来的合作机会

3.1. 您或您的单位是否有绿色电子方面的国际合作计划？
这次会议以后这个计划是否有所改变？

4. 国际合作的障碍

4.1. 从您公司或单位的角度出发，您认为哪些是建立中 - 欧合作的障碍？

4.2. 您认为怎么才能克服这些障碍？

4.3.
除了国际会议，您认为还有哪些途径可以帮助您的公司或单位建立更多的中 - 欧合作？

上海大学联系人：路秀真，电话+86-21-56331599，xzlu@staff.shu.edu.cn

请于1月25日前将填好的表格发送到 iha@vestforsk.no或xzlu@staff.shu.edu.cn

感谢您对我们工作的支持!

Appendix 3: Respondent Information

Number of respondents: 10

Geographical identity (employer): 6 Chinese, 1 Japanese, 3 Western (UK)

Type of respondent (employer): 5 research, 5 industry

Number of respondents interested in green electronics: 9/10

ID number	Name of employer	Type of employer (research or industry)	Field of interest	Geographical identity (European, Chinese, Japanese)
1	China Household Electrical Appliance Research Institute	R	Eco-design and substitute of toxic substances in the EEE	C
2	Xu-Jun	I	Lead-free solder, lead-free mounting and eco-law & standard	C
3	Tsinghua University of China	R	Disassembling of PCBs, reusing and recycling of components & parts	C
4	SGS	I	Eco design and RoHS and WEEE recycling	C
5	Kingston Technology Company, Inc.	I	Green materials for SMT, memory device processing, green passive components for memory products, China RoHS requirements	E
6	The University of Tokyo	R	LCR (Least Consumer Release), refurbishing of electronics education	J
7	Tsinghua University	R	Green design, recycling processes and reverse logistics system of electric and electronic equipment	C
8	Tin Technology	I	RoHS test house	E
9	CEPS Beijing Office	R	Chinese RoHS and its global impact	E
10	CMA Testing (Shanghai) Limited Company	I	Rules of electronics testing issued by the government	C