

Report for JSPS Asian Science Seminar FY2008 <Summary>

1. Title of Seminar JSPS-KOSEF Asian Science Seminar :

“Frontiers of the Photocatalysis and Photochemistry of Advanced Materials”

2. Purpose of Seminar

The recent progress in the science and technology of photocatalysis and photofunctionality has been quite remarkable. Photocatalytic science, first discovered and developed in Japan, is expected to contribute greatly to addressing the various urgent issues facing the global environment and in improving our living environment. Innovative advances in the cultivation and conversion of light energy into useful chemical energy and reactions, for solar technologies, electrical systems, and artificial photosynthetic processes are being actively investigated. “Photochemistry” is, in principle, a fundamental field of science which explores the interaction of light and materials, and Japan is presently on the cutting edge of research and developments in this field. With this pioneering background, we proposed to promote greater cooperation and collaboration in the Asia/Pacific region through this Seminar, especially by fostering exchanges between the leading researchers in these fields and promising young scientists who will become the leaders of tomorrow.

3. Period

From March, 2, 2009 through March, 6, 2009 (5 days)

4. Venue

KSP Hall of Kanagawa Science Park (KSP), Kawasaki City, Kanagawa Prefecture

5. Organization

(1) Cosponsors

Japan Side	Japan Society for the Promotion of Science
	Tokyo Metropolitan University, Kanagawa Academy of Science & Technology
Korean Side	Korea Science and Engineering Foundation
	Chungnam National University

(2) Organizer

1) Japan side

Name in full Haruo Inoue

Affiliation and position Tokyo Metropolitan University, Dean of the Faculty of Urban Environmental Sciences, Professor

Name in full Akira Fujishima

Affiliation and position Kanagawa Academy of Science & Technology
(KAST) , Chairman

2Koreanside

Name in full Minjoong Yoon

Affiliation and position Chungnam National University, Department of
Chemistry , Professor

6. Program: Agenda, topics, related activities (e.g., reception, excursion)

Schedule and Scientific Program:

Day 1: March 2 (Mon) – Registration, sessions, meetings, plenary lecture, and reception

Day 2: March 3 (Tues) – Sessions, meetings, plenary lecture, and after-dinner mixer

Day 3: March 4 (Wed) – Plenary lecture, research presentations (Short Talks and Posters),
commemorative photo

Day 4: March 5 (Thurs) – Sessions, meetings, plenary lecture and after-dinner mixer

Day 5: March 6 (Fri) –Excursion to see sites where photocatalysis has been applied.

*For more detailed information on the Seminar program, please refer to the attached files.

7. Lecturers and Participants

1) Number of Persons

	Lecturers	Participants	Total
Japan side	17	16	33
(Number who participated under program funding)	17	16	33
Korean side	4	13	17
(Number who participated under program funding)	4	13	17
Other persons	15	23	38
(Number who participated under program funding)	15	23	38
Total	36	52	88
(Number who participated under program funding)	36	52	88

2) List

A: Lecturers

Name in full	Position /Affiliation/ Institution(Country of affiliated institution)	Remarks
-Japan side Ye Jinhua	Managing Director,Photocatalytic Materials Center / National Institute for Materials Science / Japan	*
Bunsho Ohtani	Professor / Hokkaido University / Japan	*
Masaharu Irie	Professor / Rikkyo University / Japan	*
Haruo Inoue	Professor / Tokyo Metropolitan University / Japan	*
Hiroshi Fukumura	Professor / Tohoku University / Japan	*
Osamu Ishitani	Professor / Tokyo Institute of Technology / Japan	*
Hiroaki Misawa	Professor / Hokkaido University / Japan	*
Hiroshi Miyasaka	Professor / Osaka University / Japan	*
Kazuhiko Mizuno	Professor / Osaka Prefecture University / Japan	*
Katsuhiko Takagi	Executive Director / Kanagawa Academy of Science & Technology (KAST) / Japan	*
Hiroshi Masuhara	Professor / Nara Institute of Science and Technology / Japan	*
Tetsuro Majima	Professor / Osaka University / Japan	*
Keitaro Yoshihara	Fellow / Toyota Physical and Chemical Research Institute / Japan	*
Akira Fujishima	Chairman / Kanagawa Academy of Science & Technology (KAST) / Japan	*
Kazuhito Hashimoto	Professor / The University of Tokyo / Japan	*
Hiroshi Segawa	Professor / The University of Tokyo / Japan	*
Yoshihisa Inoue	Professor / Osaka University / Japan	*
-Korean side		
Wonyong Choi	Professor / Pohang University of Science & Technology / Korea	*
Ung Chan Yoon	Professor / Pusan National University / Korea	*
Kyung Byung Yoon	Professor / Sogang University / Korea	*
Minjoong Yoon	Professor / Chungnam National University / Korea	*
-Other Persons		
Jinfang Zhi	Dr / Technical Institute of Physics and Chemistry,Chinese Academy of Sciences / China	*
Lei Jiang	Professor / Institute of Chemistry,Chinese Academy of Sciences / China	*
Zhongze Gu	Professor / Southeast University / China	*
Xintong Zhang	Professor / Northeast Normal University / China	*
Jimmy C. Yu	Professor / The Chinese University of Hong Kong / China (Hong Kong)	*
Chung-Hsin Lu	Professor / National Taiwan University / Taiwan	*
Tata Narasinga Rao	Team Leader,Centre for Nanomaterials / International Advanced Research Centre for Powder Metallurgy & New Materials / India	*
Horst Kisch	Professor / University of Erlangen-Nurnberg / Germany	*
Vivian Wing-Wah Yam	Professor / The University of Hong Kong / China (Hong Kong)	*
Jye-Shane Yang	Professor / National Taiwan University / Taiwan	*
Suresh Das	Head,Chemical Science and Technology Division / National Institute for Interdisciplinary Science and Technology / India	*
Ken Ghiggino	Professor / University of Melbourne / Australia	*
David Whitten	Professor / University of New Mexico / U.S.A	*
V.Ramamurthy	Professor / University of Miami / U.S.A	*
A.Manivannan	Engineer / US Department of Energy / U.S.A	*

Place a check [*] in the Remark Column for those who participated using JSPS's seminar funding.

B: Participants

Name in full	Position /Affiliation/ Institution(Country of affiliated institution)	Remarks
-Japan side		
Masako Tanaka	Master Course Student / Hokkaido University / Japan	*
Fumiaki Amano	Assistant Professor / Hokkaido University / Japan	*
Osamu Tomita	2 nd year of Master's course / Hokkaido University / Japan	*
Yu Nabetani	Assistant Research Professor / Tokyo Metropolitan University / Japan	*
Kuniomi Kiyosawa	Ph.D.student(3 rd grade) / Tokyo Metropolitan University / Japan	*
Shin-ichi Matsushima	Doctorate Course Student / Tohoku University / Japan	*
Tatsuki Morimoto	Assistant Professor / Tokyo Institute of Technology / Japan	*
Maki Ohashi	Second grade of Doctoral Course / Osaka Prefecture University / Japan	*
Yasuharu Yoshimi	Lecturer / Fukui University / Japan	*
Jun Rye Choi	Ph.D.student(2 nd grade) / Osaka University /Japan	*
Kazuya Nakata	Researcher / Kanagawa Academy of Science & Technology (KAST) / Japan	*
Tsuyoshi Ochiai	Researcher / Kanagawa Academy of Science & Technology (KAST) / Japan	*
Jinliang Wang	/ Kanagawa Academy of Science & Technology (KAST) / Japan	*
Jian Liu	/ Kanagawa Academy of Science & Technology (KAST) / Japan	*
Kakarla Raghava Reddy	Postdoctoral Researcher / Kanagawa Academy of Science & Technology (KAST) / Japan	*
Cheng Yang	Assistant Professor / Osaka University / Japan	*
-Korean side		
Jungwon Kim	Graduate Student (Ph.D candidate) / Pohang University of Science & Technology / Korea	*
Yiseul Park	Graduate Student(Ph. D. candidate) / Pohang University of Science & Technology / Korea	*
Zhang Guan	Ph. D. student / Pohang University of Science & Technology / Korea	*
Wooyul Kim	Ph. D. student / Pohang University of Science & Technology / Korea	*
Nam Kyung Sung	Ph. D. course Student / Pusan National University / Korea	*
Hea Jung Park	Ph. D. course Student / Pusan National University / Korea	*
Myoung Hee Lee	Researcher / Sogang University / Korea	*
Youg Su Park	Researcher / Sogang University / Korea	*
Nak Cheon Jeong	Post Doctor / Sogang University / Korea	*
Jina Lee	Graduate Student(Master) / Chungnam National University / Korea	*
Jooran Lee	Graduate Student(Ph.D.course) / Chungnam National University / Korea	*
Sreenivasan Koliyat Parayil	Ph.D. Student / Chungnam National University / Korea	*
Jin-Hyung Park	/ Chungnam National University / Korea	*
-Other Persons		
Qinghui Zeng	Ph.D candidate / Technical Institute of Physics and Chemistry,Chinese Academy of Sciences / China	*
Yang Zhang	Dr. / Technical Institute of Physics and Chemistry,Chinese Academy of Sciences / China	*
Qi Bin	Ph.D.Candidate / Technical Institute of Physics and Chemistry,Chinese Academy of Sciences / China	*
Jin Zhai	Professor / Institute of Chemistry,Chinese Academy of Sciences / China	*
Yong Zhao	Assistant Professor / Institute of Chemistry,Chinese Academy of Sciences / China	*
Mingzhu Li	Assistant Professor / Institute of Chemistry,Chinese Academy of Sciences / China	*

Name in full	Position /Affiliation/ Institution(Country of affiliated institution)	Remarks
-Other Persons		
Chunyong Zhang	Doctorate student / Southeast University / China	*
Guisheng Li	Research Assistant / The Chinese University of Hong Kong / China (Hong Kong)	*
Xianfeng Yang	Research Assistant / The Chinese University of Hong Kong / China (Hong Kong)	*
Chung-Hsien Wu	Ph.D. Student / National Taiwan University / Taiwan	*
Jeng-Shin Ma	Ph.D. Student / National Taiwan University / Taiwan	*
Wey Yang Teoh	Postdoctoral Fellow / The University of New South Wales / Australia	*
Shuangqing Wang	Associate Professor / Institute of Chemistry, Chinese Academy of Sciences / China	*
Shayu Li	Associate Professor / Institute of Chemistry, Chinese Academy of Sciences / China	*
Jun Chen	Ph.D. Student / Institute of Chemistry, Chinese Academy of Sciences / China	*
Keith Man-Chung Wong	Research Assistant Professor / The University of Hong Kong / China (Hong Kong)	*
Yiu-Yan Anthony Tam	Doctor of Philosophy student / The University of Hong Kong / China (Hong Kong)	*
Vonika Ka-Man Au	Postgraduate Student / The University of Hong Kong / China (Hong Kong)	*
Hsin-Hau, Huang	Ph.D. Student / National Taiwan University / Taiwan	*
Guan-Jih Huang	Ph.D. Student / National Taiwan University / Taiwan	*
Wei-Ting Sun	Ph.D. Student / National Taiwan University / Taiwan	*
Shinto Varghese	Senior Research Fellow / National Institute for Interdisciplinary Science and Technology / India	*
Toby D.M.Bell	Research Fellow / University of Melbourne / Australia	*

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8. Please describe the achievements of the seminar.

(1) Expected Scientific Outcomes of the Seminar:

The interaction of materials with light can induce not only the transformation of: (1) the materials, but also (2) the light itself, and (3) the accompanying functionalities of the materials, which in turn, can realize a whole new functional expression of the entire system. From this viewpoint, the scientific frontiers under investigation have gradually progressed from studies of simple molecules → molecular clusters → supramolecules → included supramolecules → structures → structural systems. Moreover, the time-distance space of these investigations have moved from nano-scale to mesoscopic dimensions.

The photocatalytic effect generated by light stimulation of metal oxide semiconductors as an atomic cluster structure has opened up the field of “photocatalysis” and is now well known as the “Honda-Fujishima Effect”. These studies have expanded the field of photochemistry and active studies are now underway in the development of advanced meso and nanoscale photofunctional systems. Thus, “photocatalysis” and “photofunctional chemistry” have evolved into a synergetic field for the development of new and innovative materials and technologies that can harvest safe and abundant light energy for clean chemical processes.

(2) Expected Outcomes of International Exchange & Human Resources Development

The present Seminar had envisaged the participation of leading scientists and promising young researchers for close and concentrated daily lectures and discussions on the most recent advances in photocatalysis and photochemistry. Through these active and close interactions and exchanges, we hope to promote future cooperation and collaborations among the promising young researchers in this region. Stimulating fruitful discussions and providing the opportunity for younger researchers to meet and interact with the leaders in their fields as well as other young scientists in this region should inspire them to reach across borders to work towards more innovative and highly advanced photofunctional systems in a spirit of cooperation and common purpose. This Seminar provided young scientists with the opportunity to establish friendships and eventually apply for guest or post-doctorate positions in overseas labs as well as form good collaborations. Promoting scientific research activities as well as nurturing such close international relationships will be instrumental in achieving excellent scientific results and the development of high performance photofunctional systems and processes.