



Green & Sustainable Chemistry for Next Generation

The 5th GCOE International Symposium

“Catalysis as the Basis for the Innovation in Materials Science”

The 1st International Symposium of Graduate School of
Chemical Sciences and Engineering

February 21 (Tue) – 22 (Wed) 2012

Conference Hall, Hokkaido University, Sapporo, Japan

Day 1: Tuesday, February 21, 2012

OPENING REMARKS SESSION (Chair: Professor Hiroki Habazaki)

08:30 Registration

09:00 Opening ceremony

PLENARY LECTURE 1 (Chair: Professor Atsushi Fukuoka)

09:15 “Positive Green Chemistry: Energy and Materials Strategy for the 21st Century”

Professor Makoto Misono (University of Tokyo, Japan)

- coffee break -

PLENARY LECTURE 2 (Chair: Professor Masako Kato)

10:30 “Nanoelectronics: Molecular Metal Wires and Related Molecular Materials”

Professor Shie-Ming Peng (National Taiwan University, Taiwan)

ACTIVITY REPORT OF THE GCOE PROGRAM (Chair: Professor Masako Kato)

11:30 “Innovative Researches and Education in the GCOE Program”

Professor Norio Miyaura (Hokkaido University, Japan)

- lunch break - (12:00-13:30)

PARALLEL SESSION: Molecular Catalysis

(Chairs: Professor Masaya Sawamura and Professor Hajime Ito)

13:30 Keynote Lecture 1

“Cross Coupling Reactions involving Migratory Insertion of Metal Carbene”

Professor Jianbo Wang (Peking University, China)

14:10 Invited Lecture 1

“Metal-Catalyzed C-H Bond Functionalization”

Professor Teck Peng Loh (Nanyang Technological University, Singapore)

14:40 Invited Lecture 2

“Asymmetric Total Synthesis of Solanoeclipin A”

Professor Keiji Tanino (Hokkaido University, Japan)

- 15:10 Invited Lecture 3
“Catalytic C-H Bond Functionalization of Heterocycles for the C-C and C-N Bond Formation”
Professor Sukbok Chang (KAIST, Korea)
- 15:40 Invited Lecture 4
“Asymmetric Cyanation Catalyzed by Ru-Li Combined Systems”
Professor Takeshi Ohkuma (Hokkaido University, Japan)

- coffee break -

PARALLEL SESSION: Solid State Catalysis

(Chairs: Professor Bunsho Ohtani and Professor Shin Mukai)

- 13:30 Keynote Lecture 2
“Homogeneous Catalysis in Heterogeneous Nanoreactors”
Professor Can Li (Chinese Academy of Sciences, China)
- 14:10 Keynote Lecture 3
“Visible Light Photocatalysts Based on Interfacial Charge Transfer and Multi-Electron Oxygen Reduction Catalyst”
Professor Kazuhito Hashimoto (University of Tokyo, Japan)
- 14:50 Invited Lecture 5
“Advances in Solid-State Catalysts Based on Complex Metal Oxide Materials”
Professor Wataru Ueda (Hokkaido University, Japan)
- 15:20 Invited Lecture 6
“Design, Synthesis, and Characterization of Bioinspired Heterogeneous Catalysts”
Professor Alexander Katz (University of California, Berkeley, USA)
- 15:50 Invited Lecture 7
“Partial-Oxidative Conversion of Lignocellulose over Iron-Oxide Catalysts”
Professor Takao Masuda (Hokkaido University, Japan)

- coffee break -

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PLENARY LECTURE 3 (Chair: Professor Takeshi Ohkuma)

- 16:45 “Cross-Coupling Reactions of Organoboranes: An Easy Way for Carbon-Carbon Bonding”
Professor Akira Suzuki
(2010 Nobel Laureate in Chemistry, Hokkaido University, Japan)

- Banquet - (18:30- @Sapporo Aspen Hotel)

Day 2: Wednesday, February 22, 2012

POSTER SESSION

(Chairs: Professor Hisanori Senboku, Professor Akira Kakugo and Professor Hiroki Oguri)

09:00 Poster parade

10:30 Poster presentation

- lunch break – (11:30-13:00)

PARALLEL SESSION: Physical Chemistry of Catalysis

(Chairs: Professor Shinichi Kikkawa and Professor Masatoshi Osawa)

13:00 Invited Lecture 8

“Advanced Electron Microscopic Study of Catalytic Materials”
Professor Nobuo Tanaka (Nagoya University, Japan)

13:30 Invited Lecture 9

“Beyond the State of the Art of Electrocatalyst in Direct Formic Acid Fuel Cells”
Professor Jaeyoung Lee (GIST, Korea)

14:00 Invited Lecture 10

“Plasmon-Induced Photoexcitation of Molecules for Effective Reactions”
Professor Kei Murakoshi (Hokkaido University, Japan)

14:30 Invited Lecture 11

“Computational Chemistry of Energy-Relevant Materials”
Professor Richard Dronskowski (RWTH Aachen University, Germany)

15:00 Invited Lecture 12

“Direct Observation of Metal-Support Interaction Observed in R and K Spaces”
Professor Kiyotaka Asakura (Hokkaido University, Japan)

- coffee break –

PARALLEL SESSION: Biocatalysis

(Chairs: Professor Koichiro Ishimori and Professor Tohru Dairi)

13:00 Keynote Lecture 4

“Construction of Metalloenzymes: Catalysts Embedded in Proteins”
Professor Yoshihito Watanabe (Nagoya University, Japan)

13:40 Invited Lecture 13

“One-Pot Synthesis of Natural Product-Like Compounds by Complex Biocatalysts”
Professor Hiroaki Suga (University of Tokyo, Japan)

14:10 Invited Lecture 14

“Organic Synthesis Learned from Nature”
Professor Hideaki Oikawa (Hokkaido University, Japan)

14:40 Invited Lecture 15

“Biocatalysis - Microbial Engineering for Advanced Biofuel Production”
Director Dr. Taek Soon Lee (Lawrence Berkeley National Laboratory, USA)

15:10 Invited Lecture 16

“Organocatalyst Mediated Group Transfer Polymerization”
Professor Toyoji Kakuchi (Hokkaido University, Japan)

- coffee break –

PLENARY LECTURE 4 (Chair: Professor Seiichi Taguchi)

16:00 “Designers Enzymes”

Professor Donald M. Hilvert (ETH Zürich, Switzerland)

CLOSING REMARKS SESSION (Chair: Professor Seiichi Taguchi)

17:00 Closing Address

Organizers

Chair: Professor Norio Miyaura

Co-Chair: Professor Noboru Kitamura

Organizing Committee

Professor Hiroki Habazaki

Professor Koichiro Ishimori

Professor Masamichi Ogasawara

Professor Masatoshi Osawa

Professor Masaya Sawamura

Professor Seiichi Taguchi