



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

[Date] February 21 (Tue) – 22 (Wed) 2012

[Venue] Conference Hall, Hokkaido University, Sapporo, Japan

Organizers

Chair: Professor Norio Miyaura

Co-Chair: Professor Noboru Kitamura

Day 1 Tuesday, February 21, 2012

OPENING REMARKS SESSION

9:00 Opening ceremony

Welcome address / Professor Norio Miyaura (Project Leader of the Global COE Program)

Greeting addresses / Professor Noboru Kitamura (Dean of the Graduate School of Chemical Sciences and Engineering)

Professor Hiroshi Saeki (President of Hokkaido University)

PLENARY LECTURE 1

9:15 Professor Makoto Misono (University of Tokyo, Japan) “Positive Green Chemistry; Energy and Materials Strategy for the 21st Century”

10:15 – 10:30 coffee break (15 min)

PLENARY LECTURE 2

10:30 Professor Shie-Ming Peng (National Taiwan University, Taiwan) “Nanoelectronics: Molecular Metal Wires and Related Molecular Materials”

ACTIVITY REPORT OF THE GCOE PROGRAM

11:30 Professor Norio Miyaura

“Innovative Researches and Education in the GCOE Program”

12:00 – 13:30 lunch break (90 min)

PARALLEL SESSION MOLECULAR CATALYSIS

13:30 **Keynote Lecture 1** Professor Jianbo Wang (Peking University, China)

“Cross-Coupling Reactions Involving Migratory Insertion of Metal Carbene”

14:10 **Invited Lecture 1** Professor Teck Peng Loh (Nanyang Technological University, Singapore)

“Metal-Catalyzed C-H Bond Functionalization”

14:40 **Invited Lecture 2** Professor Keiji Tanino (Hokkaido University, Japan)

“Asymmetric Total Synthesis of Solanoclepin A”

15:10 **Invited Lecture 3** Professor Sukbok Chang (KAIST, Korea)

“Catalytic C-H Activation of Heteroarenes for C-C and C-N Bond Formation”

15:40 **Invited Lecture 4** Professor Takeshi Ohkuma (Hokkaido University, Japan)

“Asymmetric Cyanation Catalyzed by Ru-Li Combined Systems”

16:10 – 16:45 coffee break (35 min)

PLENARY LECTURE 3

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

18:30 – Banquet (Sapporo Aspen Hotel)

PARALLEL SESSION SOLID STATE CATALYSIS

13:30 **Keynote Lecture 2** Professor Can Li (Chinese Academy of Sciences, China)

“Homogeneous Catalysis in Heterogeneous Nanoreactors”

14:10 **Keynote Lecture 3** Professor Kazuhito Hashimoto (University of Tokyo, Japan)

“Visible Light Photocatalysts Based on Interfacial Charge Transfer and Multi-Electron Oxygen Reduction Catalyst”

14:50 **Invited Lecture 5** Professor Wataru Ueda (Hokkaido University, Japan)

“Advances in Solid-State Catalysts Based on Complex Metal Oxide Materials”

15:20 **Invited Lecture 6** Professor Alexander Katz (University of California, Berkeley, USA)

“Enhancing Heterogeneous Catalysis via Design of Organic-Inorganic Interfaces”

15:50 **Invited Lecture 7** Professor Takao Masuda (Hokkaido University, Japan)

“Partial-Oxidative Conversion of Lignocellulose over Iron-Oxide Catalysts”

Day 2 Wednesday, February 22, 2012

POSTER SESSION

9:00 – 10:30 Poster parade

10:30 – 11:30 Poster presentation

11:30 – 13:00 lunch break (90 min)

PARALLEL SESSION PHYSICAL CHEMISTRY OF CATALYSIS

13:00 **Invited Lecture 8** Professor Nobuo Tanaka (Nagoya University, Japan)

“Advanced Electron Microscopic Study of Catalytic Materials”

13:30 **Invited Lecture 9** Professor Jaeyoung Lee (GIST, Korea)

“Beyond the State of the Art of Electrocatalyst in Direct Formic Acid Fuel Cells”

14:00 **Invited Lecture 10** Professor Kei Murakoshi (Hokkaido University, Japan)

“Plasmon-Induced Photoexcitation of Molecules for Effective Reactions”

14:30 **Invited Lecture 11** Professor Richard Dronskowski (RWTH Aachen University, Germany)

“Computational Chemistry of Energy-Relevant Materials”

15:00 **Invited Lecture 12** Professor Kiyotaka Asakura (Hokkaido University, Japan)

“Direct Observation of Metal-Support Interaction Observed in R and K Spaces”

15:40 – 16:00 coffee break (20 min)

PLENARY LECTURE 4

16:00 Professor Donald M. Hilvert (ETH Zürich, Switzerland) “Designers Enzymes”

CLOSING REMARKS SESSION

17:00 Closing Address

PARALLEL SESSION BIOCATALYSIS

13:00 **Keynote Lecture 4** Professor Yoshihito Watanabe (Nagoya University, Japan)

“Construction of Metalloenzymes: Catalysts Embedded in Proteins”

13:40 **Invited Lecture 13** Professor Hiroaki Suga (University of Tokyo, Japan)

“One-Pot Synthesis of Natural Product-Like Compounds by Complex Biocatalysts”

14:10 **Invited Lecture 14** Professor Hideaki Oikawa (Hokkaido University, Japan)

“Organic Synthesis Learned from Nature”

14:40 **Invited Lecture 15** Director Dr. Taek Soon Lee (Lawrence Berkeley National Laboratory, USA)

“Microbial Production of Terpene-Based Advanced Biofuels”

15:10 **Invited Lecture 16** Professor Toyoji Kakuchi (Hokkaido University, Japan)

“Organocatalyst Mediated Group Transfer Polymerization”

Organizing Committee

Professor Hiroki Habazaki

Professor Masamichi Ogasawara

Professor Masaya Sawamura

Professor Koichiro Ishimori

Professor Masatoshi Osawa

Professor Seichi Taguchi

Publication Office

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