

Nagoya Univ.-Tsinghua Univ.-Toyota Motor Corp.-

Hokkaido Univ. Joint Symposium

— *Materials Science and Nanotechnology for the 21st Century* —

July 21-24, 2014 , Hokkaido, Japan

Conference Venue

Akira Suzuki Hall, Frontier Research in Applied Sciences Building,
Faculty of Engineering, Hokkaido University
(Address: Kita 13, Nishi 8, Kita-ku, Sapporo, Hokkaido 060-8628, Japan)

Program

Monday, July 21

18:00 – *Welcome Reception at Sapporo Aspen Hotel*

Tuesday, July 22

9:30 – 9:45 **Welcome address**
Toyoharu Nawa (Dean of Faculty of Eng. Hokkaido University)

Opening Address

Kunihito Koumoto (Nagoya University)

Hong Lin (Tsinghua University)

Katsutoshi Noda (Toyota Motor Corporation)

Shinichi Kikkawa (Hokkaido University)

<Session I> *Chair: Prof. Mina Han (Nagoya Univ.)*

9:45 – 10:00 **Takahiro Seki** (Nagoya Univ.)
IL-01 “Photoalignment of Liquid Crystalline Polymers Commanded from the Free Surface”

10:00 – 10:15 **Yasuchika Hasegawa** (Hokkaido Univ.)
IL-02 “Enhanced Magneto-Optical Properties of EuS-Au Nano-Aggregates”

10:15 – 10:30 **Hong Lin** (Tsinghua Univ.)
IL-03 “PbI₂ Concentration Affected on CH₃NH₃PbI₃ Perovskite Hybrid Solar Cells”

10:30 – 10:45 **Shigeji Konagaya** (Nagoya Univ.)
IL-04 “Conductivity Enhancement of Conductive Polymer Composites by Cellulose Nano-Fiber (CeNF)”

10:45-11:00 **Break**

<Session II> *Chair: Prof. Yasuchika Hasegawa (Hokkaido Univ.)*

11:00 – 11:15 **Mina Han** (Nagoya Univ.)
IL-05 “Red Fluorescent One-Dimensional Azobenzene Nanostructures”

11:15 – 11:30 **Zhengjun Zhang** (Tsinghua Univ.)
IL-06 “Oxygen Defects Induced Room-Temperature Ferromagnetism in Un-Doped ZnO”

11:30 – 11:45 **Shinichi Kikkawa** (Hokkaido Univ.)
IL-07 “Enhanced Magnetic Coercivity in the Spinel Ferrite Powder Hybridized with α -Fe₂O₃ or BaFe₁₂O₁₉”

11:45 – 12:00 **Masaaki Ito** (Toyota Motor Corp.)
IL-08 “Magnetic Domain and Microstructure of Hot-Deformed Nd-Fe-B Magnets”

12:00 – 13:00 **Lunch**

<Session III >

13:00 – 14:30 **Poster Session**

<Session IV > *Chair: Prof. Hong Lin (Tsinghua Univ.)*

14:30 – 14:45 **Kiyoharu Tadanaga** (Hokkaido Univ.)
IL-09 “Hydroxide Ion Conduction in Layered Double Hydroxides and Their Application to Electrochemical Devices”

14:45 – 15:00 **Helena Oi Lun Li** (Nagoya Univ.)
IL-10 “Nano-size Regulated Carbon Materials for Battery through Solution Plasma Processing”

15:00 – 15:15 **Zhigang Yang** (Tsinghua Univ.)
IL-11 “Oxidation of Bond Coating Materials and the Predication of Service Life for Gas Turbine Blade Application”

15:15 – 15:30 **Kazuhisa Azumi** (Hokkaido Univ.)
IL-12 “Recent Progress in Electrochemistry Using Ionic Liquid”

15:30 – 15:45 **Tsukasa Torimoto** (Nagoya Univ.)
IL-13 “Preparation and Electrocatalytic Activities of AuPd@In₂O₃ Core-Shell Particles via Ionic Liquid/Metal Sputter Deposition Technique”

15:45 – 16:00 **Yoshitaka Aoki** (Hokkaido Univ.)
IL-14 “Bulk Mixed Ion Electron Conduction in Amorphous Gallium Oxide Causes Memristive Behaviour”

16:00 – 16:15 **Break**

<**Session V**> *Chair: Dr. Akira Kato (Toyota Motor Corp.)*

16:15 – 16:30 **Chunlei Wan** (Nagoya Univ.)
IL-15 “Optimizing TiS₂-Based Organic/Inorganic Superlattices for Higher Thermoelectric Performance”

16:30 – 16:45 **Yuanhua Lin** (Tsinghua Univ.)
IL-16 “High-Performance Oxides-Based Thermoelectric Ceramics for Energy Conversion”

16:45 – 17:00 **Isao Ogino** (Hokkaido Univ.)
IL-17 “Scalable Exfoliation of Graphite Oxide”

17:00 – 17:15 **Michiko Kusunoki** (Nagoya Univ.)
IL-18 “Novel Features of Graphene Derived from Various Carbides”

18:30 – **Banquet and NTHH Award Ceremony at Sapporo Beer Garden**

Wednesday, July 23

<**Session VI**> *Chair: Prof. Tsukasa Torimoto (Nagoya Univ.)*

9:30 – 9:45 **Ill Yong Kim** (Nagoya Univ.)
IL-19 “Induction of Osteoconductivity of Tricalcium Phosphate Particles Dispersed in Polymethylmethacrylate Matrix”

9:45 – 10:00 **Wenzheng Zhang** (Tsinghua Univ.)
IL-20 “In-situ TEM Study of Lath Martensite/Austenite Interface Migration”

- 10:00 – 10:15 **Makoto Kobashi** (Nagoya Univ.)
IL-21 “Direct Bonding Between Metals and Polymers Using Interpenetrating Layer”
- 10:15 – 10:30 **Qingling Feng** (Tsinghua Univ.)
IL-22 “Evaluation of PLLA/Pearl Powder Composite Scaffolds in Rabbit Radius Defects”
- 10:30 – 10:45 **Toshihiro Shimada** (Hokkaido Univ.)
IL-23 “Controlling Nanomaterial Synthesis Under High Energy Environment”
- 11:00 – **Lunch**
- 12:00 – **Move to Noboribetsu**
- 14:30 – 16:30 **Round Table Discussion at Dai-ichi Takimotokan Hotel**
- 18:30 – **Dinner**

Thursday, July 24

- 9:00 – 9:30 **Closing Ceremony**
- 9:30 – **Leave from Noboribetsu**

Poster Session

Tuesday, July 22

13:00 – 14:30

- P-01 Takeshi Mori** (Hokkaido Univ.)
“Characterization of the Hierarchical Pore System of Macropore-Introduced Carbon Cryogel Monolith Synthesized Using a Thermoplastic Template”
- P-02 Ryouta Negishi** (Nagoya Univ.)
“Sulfides with 4-Fold Coordinated Cu for Novel p-Type Thermoelectric Materials”
- P-03 Seiichiro Yoshida** (Hokkaido Univ.)
“Cesium Uptake in a Flow System Using Ammonium Molybdophosphate Immobilized in a Silica Microhoneycomb”
- P-04 Shinya Yamamoto** (Nagoya Univ.)
“Low Thermal Conductivity of SrTi₁₁O₂₀ with Rattling Atoms”
- P-05 Gang Ou** (Tsinghua Univ.)
“Enhanced Oxide-Ion Conductivity in Highly *c*-Axis Textured La₁₀Si₆O₂₇ Ceramic”
- P-06 Jun-Seob Lee** (Hokkaido Univ.)
“Micro-Electrochemistry of Sulfide Ion Generation Reaction on Iron Surface”
- P-07 Wataru Norimatsu** (Nagoya Univ.)
“Interface Improvement by Nitrogen in Epitaxial Graphene on SiC”
- P-08 Yu Takabatake** (Hokkaido Univ.)
“Passive Oxide Film Formed on Iron in Sulfuric Acid Depending on Crystallographic Orientation”
- P-09 Atsushi Masumori** (Nagoya Univ.)
“Epitaxial Growth of a B₄C Thin Film on SiC(000-1)”
- P-10 Akio Nitta** (Hokkaido Univ.)
“Reversed Double-Beam Photoacoustic Spectroscopic Study on the Density of Electron Traps in Titania Photocatalysts”
- P-11 Rizwan Sagar** (Tsinghua Univ.)
“Electrical and Optical Properties of Semiconducting Amorphous Carbon Thin Films”
- P-12 Atsuo Kamura** (Hokkaido Univ.)
“Gallium Oxynitride Nanowires Prepared Under the Copresence of ZnO”

- P-13** **Yuta Arai** (Nagoya Univ.)
“Bonding Between Aluminum and Polymer Using Interpenetrating Layer”
- P-14** **Daixi Chen** (Hokkaido Univ.)
“Characterization of Partially Decomposed SrTaO₂N Perovskite”
- P-15** **Wataru Naruse** (Nagoya Univ.)
“Thermal Conductivity of Phase Change Material / Aluminum Interpenetrating Phase Composite”
- P-16** **Xiaoyang Cui** (Tsinghua Univ.)
“Efficient Synthesis of Nitrogen-Doped Reduced Graphene Oxide as Metal-free Catalyst for Oxygen Reduction Reaction in Fuel Cells”
- P-17** **Wei Xie** (Hokkaido Univ.)
“Synthesis and Properties of Molecule-Doped Diamond-Like Carbons”
- P-18** **Ryo Takahashi** (Nagoya Univ.)
“Synthesis of Cu-Fe Nanoparticles as Bi-Functional Catalyst for Li-air Battery”
- P-19** **Takuya Takagi** (Hokkaido Univ.)
“Fabrication of CoFe₂O₄/LiTi₂O₄ Multilayers by Molecular Beam Epitaxy”
- P-20** **Hiroki Hayashi** (Nagoya Univ.)
“Development of the Graphitic Structure of Solution Plasma Synthesized Carbon by Introducing Halogen Compound”
- P-21** **Chiharu Kura** (Hokkaido Univ.)
“Resistive Switching of Highly-Nonstoichiometric GaO_x Thin Films with Low valence state Ga⁺ Cation Having (4s)² Lone Pair Electrons”
- P-22** **Xue Liu** (Tsinghua Univ.)
“Large-Area and Uniform Amorphous Metallic Nanowire Arrays Prepared by Die Nanoimprinting”
- P-23** **Takenori Yamasaki** (Hokkaido Univ.)
“Highly Dispersed Pt Deposition on Platelet Structure Carbon Nanofiber Synthesized by Liquid Phase Carbonization”
- P-24** **Masato Ito** (Nagoya Univ.)
“Formation of Orientated Fibers Consisting of Hydroxyapatite in Hydrogels”
- P-25** **Hiroyuki Takano** (Hokkaido Univ.)
“Characterization and Catalytic Properties of Ni/Ca-doped ZrO₂ for CO₂ Methanation”

- P-26** **Daisuke Sugioka** (Nagoya Univ.)
“Single-Step Synthesis of Au Nanoparticle Monolayer on Ionic Liquid Surface Using a Sputter-Deposition Technique”
- P-27** **Yu Huan** (Tsinghua Univ.)
“Grain Size Effects on Piezoelectric Properties and Domain Structure of BaTiO₃ Ceramics Prepared by Two-Step Sintering”
- P-28** **Nataly Carolina Rosero-Navarro** (Hokkaido Univ.)
“Low Temperature Synthesis of Li₇La₃(Zr₂-X Nb_X)O₁₂ (X = 0 – 1) Using a Sol-Gel Process”
- P-29** **Yuujiro Ishigami** (Nagoya Univ.)
“Preparation of Near-Infrared-Light-Emitting AgInTe₂ Nanoparticles”
- P-30** **Mami Nishikata** (Hokkaido Univ.)
“Preparation of Translucent Gd₂Si₂O₇:Ce Polycrystalline Thin Plates and Their Scintillation Performance for Alpha-Particles”
- P-31** **Yuutarou Kamiya** (Nagoya Univ.)
“Shape- and Composition-Dependent Photochemical Property of ZnS-AgInS₂ Solid Solution Nanorods”
- P-32** **Naoyuki Murakami** (Hokkaido Univ.)
“Atmosphere Dependence of Electric Conductivity of Polypyrrole”
- P-33** **Tingting Xu** (Tsinghua Univ.)
“Enhanced Piezoelectric Properties of PZT Ceramics with 3-1 Type Porous Structure Fabricated by Freeze-Casting Processing”
- P-34** **Sae Kashima** (Hokkaido Univ.)
“Fabrication and Characteristics of Poly (3-octyloxythiophene) Thin Film Transistor”