14th Hokkaido University–Nanjing University–NIMS/FMCU Joint Symposium

"Designed Chemistry for Future"

December 7 – 8, 2018
Hokkaido University, Sapporo, Japan
The 14th Hokkaido University—Nanjing University
—NIMS/FMCU Joint Symposium
"Designed Chemistry for Future"

December 7 – 8, 2018
Hokkaido University, Sapporo, Japan

**Sponsors**

Graduate School of Chemical Sciences and Engineering, Hokkaido University
Ambitious Leader’s Program; “Fostering Future Leaders to Open New Frontiers in Materials Science”, Hokkaido University,
Frontier Chemistry Center, Faculty of Engineering, Hokkaido University,
World Premier International Research Center Initiative, Hokkaido University

National Institute for Materials Science

School of Chemistry and Chemical Engineering, Nanjing University
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Chair: Kei Murakoshi (Hokkaido University)

Xinghua Xia (Nanjing University)
Shuo Huang (Nanjing University)

Hideaki Oikawa (Hokkaido University)
Sadamu Takeda (Hokkaido University)
Masako Kato (Hokkaido University)
Koichiro Ishimori (Hokkaido University)
Tetsuya Taketsugu (Hokkaido University)

Masafumi Yoshio (NIMS)

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Tomohide Saio (Hokkaido University)
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Masato Kobayashi (Hokkaido University)
Takeshi Iwasa (Hokkaido University)

Contact Address:
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symposium2018@sci.hokudai.ac.jp
Program

DAY 1 (Friday, December 7)

8:40 Welcome Address  
Kei Murakoshi (Hokkaido Univ.)

8:45 Opening Remarks  
Hideaki Oikawa (Hokkaido Univ.)  
Shuo Huang (Nanjing Univ.)

Keynote Session  
Chair: Kei Murakoshi

9:00-9:45 KL-1 Xinghua Xia (Nanjing Univ.)  
Plasmon Enhanced IR Spectroscopy and Electrochemistry  
Chair: Shuo Huang

9:45-10:30 KL-2 Satoshi Maeda (Hokkaido Univ.)  
Reaction Path Network and Its Analysis:  
Toward Systematic Prediction of Chemical Reactions

―――― Short Break (10 min) ――――

Oral Session 1  
Chair: Tetsuya Taketsugu

10:40-10:55 IL-1 Kiyoharu Tadanaga (Hokkaido Univ.)  
Preparation of Sulfide Solid Electrolyte from Solution for All Solid-State Lithium Battery

10:55-11:10 IL-2 Luming Peng (Nanjing Univ.)  
Investigations of Oxide Nanostructures with $^{17}$O Solid-State NMR Spectroscopy

11:10-11:25 IL-3 Yasuhide Inokuma (Hokkaido Univ.)  
Shapable Aliphatic Chains for Molecular Coiling

11:25-11:40 IL-4 Dongdong Wu (Nanjing Univ.)  
Assembling of Small Molecules into 4D Stem Cell Microenvironment with Definable Biochemical Ligands Patterning

―――― Group Photo and Lunch ――――

Oral Session 2  
Chair: Luming Peng

13:30-13:45 IL-5 Atsushi Miura (Hokkaido Univ.)
Photoinduced Single Sub-Picolitter Microparticle-Based Ultratrace Analysis at Single Molecule Level
13:45-14:00   IL-6  **Mengning Ding**  (Nanjing Univ.)
   On-Chip Signaling Approaches for in situ Investigation of Electrochemical Processes
14:00-14:15   IL-7  **Hirokazu Kobayashi**  (Hokkaido Univ.)
   Catalytic Conversion of Chitin to Chemicals
14:15-14:30   IL-8  **Shuo Huang**  (Nanjing Univ.)
   Visualizing Single Molecule Sensing in a High Throughput Nanopore Array: from Measuring Elementary Charges to Sequencing Bio-Macromolecules
14:30-14:45   IL-9  **Hideo Kaiju**  (Hokkaido Univ.)
   Magnetocapacitance Effect in Magnetic Tunnel Junctions

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<td><strong>Mengning Ding</strong></td>
<td>Nanjing Univ.</td>
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<td><strong>Hirokazu Kobayashi</strong></td>
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Oral Session 3
Chair: **Sadamu Takeda**
15:00-15:15   IL-10  **Masafumi Yoshio**  (NIMS)
   Supramolecular Liquid-Crystalline Materials for Mass Transport and Stimuli-Responsive Emission
15:15-15:30   IL-11  **Dongshan Zhou**  (Nanjing Univ.)
   Application and Development of Chip Calorimetry for the Study of Glass Transition, Crystallization and Nucleation in Polymeric Materials
15:30-15:45   IL-12  **Takanori Suzuki**  (Hokkaido Univ.)
   Prototype for Molecular-Based Data Storage Devices Based on Dynamic Redox Systems with Electrochemical Bistability
15:45-16:00   IL-13  **Chunyu Zhu**  (Hokkaido Univ.)
   Hierarchical Porous Carbon for Efficient Electrochemical Oxygen Reduction Reaction

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Poster Presentation

16:15-17:30

17:30  Closing Remarks
   **Xinghua Xia**  (Nanjing Univ.)

18:00-20:00  Banquet @ Restaurant ELM

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**DAY 2 (Friday, December 8)**

9:30-18:00  Free Discussion & Mutual Collaborations
Poster Session

P-1  Yuchun Wang
Investigation on the Strong Coupling State of Plasmonic Heterostructure via Electrochemical Method

P-2  Jian Li
In Aqueous IR Analysis through Antenna Enhanced Attenuated Total Reflection IR Spectroscopy

P-3  Shunpei Oikawa
Electrochemical Control of the Strong Coupling State between Dye Molecules and Surface Lattice Resonance

P-4  Yanfeng Liu
Room Temperature Synthesis of pH-Switchable Polyaniline Quantum Dots as a Turn-on Fluorescent Probe for Acidic Biotarget Labeling

P-5  Kazuma Sugawara
Multi-Chromic Behavior of Tetraarylanthraquinodimethane Derivatives: Electrochromism in Solution and Mechanofluorochromism in Solid State

P-6  Linlin Qin
Conformational Transitions of Polymer Chains in Solutions Characterized by Fluorescence Resonance Energy Transfer

P-7  Yuta Fuji
Fe-P-S Electrodes in All-Solid-State Lithium Secondary Batteries Using Sulfide-based Solid Electrolytes

P-8  Wen He
On-Chip Electrochemical Intercalation of Two-Dimensional Molybdenum Disulfide with Functional Semiconductor Molecules

P-9  Yuma Sasaki
Molecular Nano-Spintronic Devices Utilizing Ni_{78}Fe_{22} Thin-Film Edges

P-10 Yongjie Wang
Label-Free Optical Imaging of the Dynamic Stick-Slip and Migration of Single Sub-100nm Surface Nanobubbles: A Super-Localization Approach

P-11 Yu Iwai
Composition, Valence and Oxygen Reduction Reaction Activity of Mn-Based Layered Double Hydroxides

P-12 Sha Wang
A Coordination Investigation of Metal Ions with Amino Acid Residues of MspA Protein Nanopore at the Single-Molecule Level
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<td>Caspase-Instructed Macrocyclization and Self-Assembly Amplify Photoacoustic Signal for Targeted Imaging of Tumor Apoptosis</td>
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<td>Nucleation and Crystallization of Protein Molecules Controlled by Laser Beams</td>
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<td>Bioinspired Synthesis of Chromophores from Chain-Like Molecules</td>
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