



NIMS AWARD SYMPOSIUM 2024

State-of-the-art Characterization to Accelerate Materials Innovation

INNOVATION

CHARACTERIZATION



November 6^{Wed}-7^{Thu} 2024

TSUKUBA International Congress Center Convention Hall 300

NIMS Award 2024 Winners



Electron microscopy,
grain boundaries/interfaces

Prof. Yuichi Ikuhara

Distinguished Research Professor
Institute of Engineering Innovation, School
of Engineering, The University of Tokyo



Atomic force microscopy

Prof. Franz J. Giessibl

Chair for Quantum Nanoscience
Institute of Experimental and Applied Physics
University of Regensburg, Germany

FREE
admission

Invited Speakers

- Simon J. L. Billinge
- Lifeng Chi
- Rafal E. Dunin-Borkowski
- Changyoung Kim
- Yasukazu Murakami
- Hendrik Ohldag
- Colin Ophus
- Soohyon Phark
- Kazutomo Suenaga
- Yasuhiro Sugawara
- Yukio Takahashi
- Masaki Takata
- Takayuki Uchihashi

How to join?

Online Registration and Call for Posters are OPEN
on the Official Website! >



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National Institute for Materials Science
Change the World with Materials



Nov. 6 WED

Nov. 7 THU

State-of-the-art Characterization to Accelerate Materials Innovation



- 10:00 - 10:10 Opening Remarks, Greeting from MEXT
- 10:10 - 10:20 NIMS Introduction by Dr. Kazuhiro Hono (President of NIMS)
- 10:20 - 12:15 **NIMS Award Ceremony and NIMS Award Winning-lectures**
 Prof. Yuichi Ikuhara (The University of Tokyo)
 "Breakthrough Developments in Atomic Resolution Electron Microscopy and Its Applications for Materials Science"
 Prof. Franz Josef Giessibl (University of Regensburg, Germany)
 "The Atom"
- 12:15 - 13:30 Photo Session & Lunch Break

Session 1 Advanced Characterization for Materials Innovation

- 13:30 - 14:00 **Invited Talk S1-1** Prof. Rafal E. Dunin-Borkowski (Institute for Microstructure Research, Germany)
 "Advanced Transmission Electron Microscopy of Microstructure-property Relationships in Magnetic Materials"
- 14:00 - 14:30 **Invited Talk S1-2** Prof. Kazutomo Suenaga (Osaka University)
 "Single-atom Spectroscopy in Low-dimensional Materials"
- 14:30 - 15:00 **Invited Talk S1-3** Prof. Takayuki Uchihashi (Nagoya University)
 "Beyond the Static: Unveiling Single-Molecule Dynamics with High-Speed Atomic Force Microscopy"
- 15:00 - 15:20 **NIMS Talk S1-4** Dr. Shigeki Kawai (Nanoprobe Group/CBRM)
 "On-surface Synthesis Studied with High-resolution Scanning Probe Microscopy"
- 15:20 - 15:40 Coffee Break
- 15:40 - 16:10 **Invited Talk S1-5** Prof. Masaki Takata (Tohoku University)
 "Building a New Range of Synchrotron Radiation Facility"
- 16:10 - 16:40 **Invited Talk S1-6** Prof. Simon J. L. Billinge (Columbia University, USA)
 "Real Materials in Action: Studying Structure on Different Length and Time-scales"
- 16:40 - 17:00 **NIMS Talk S1-7** Dr. Shinji Kohara (Quantum Beam Diffraction Group/CBRM)
 "Structure and Thermophysical Properties of High-temperature Levitated Liquids"
- 17:00 - 18:00 Poster Session (Coffee Break)
- 18:00 - 19:30 NIMS Award Reception

Session 2 Synchrotron Spectroscopy and Imaging

- 10:00 - 10:30 **Invited Talk S2-1** Prof. Changyoung Kim (Seoul National University, Korea)
 "Manipulation & Detection of Electronic States of Atomically Thin Films of Quantum Materials"
- 10:30 - 11:00 **Invited Talk S2-2** Dr. Hendrik Ohldag (Advanced Light Source, Lawrence Berkeley National Laboratory, USA)
 "Complex Materials at Device Relevant Time- and Length-scales - A Soft X-ray Spectromicroscopy Study"
- 11:00 - 11:30 **Invited Talk S2-3** Prof. Yukio Takahashi (Tohoku University)
 "Visualization of Nanoscale Structures and Chemical States by Coherent X-ray Diffraction Imaging"
- 11:30 - 11:50 **NIMS Talk S2-4** Dr. Yuichi Yamasaki (Synchrotron Radiation Imaging Team/CBRM)
 "Synchrotron Radiation Imaging for Antiferromagnetic Materials Research"
- 11:50 - 13:00 Lunch Break

Session 3 Scanning Probe Microscopy

- 13:00 - 13:30 **Invited Talk S3-1** Prof. Lifeng Chi (Soochow University, China)
 "From N-alkane to Conjugated Polyene and Their Aromatization via On-surface Chemistry"
- 13:30 - 14:00 **Invited Talk S3-2** Prof. Yasuhiro Sugawara (Osaka University)
 "Optical Imaging of a Single Molecule with Subnanometer Resolution by Photoinduced Force Microscopy"
- 14:00 - 14:30 **Invited Talk S3-3** Prof. Soohyon Phark (Center for Quantum Nanoscience, Korea)
 "A Qubit Platform Crafted Atom-by-atom"
- 14:30 - 14:50 **NIMS Talk S3-4** Dr. Shunsuke Yoshizawa (Nanoprobe Group/CBRM)
 "Imaging Quantum Phenomena with a Cryogenic Scanning Tunneling Microscope"
- 14:50 - 15:10 Coffee Break

Session 4 Advanced Electron Microscopy

- 15:10 - 15:40 **Invited Talk S4-1** Prof. Yasukazu Murakami (Kyushu University)
 "Electron Holography Studies on the Charging State of Catalysts Nanoparticles"
- 15:40 - 16:10 **Invited Talk S4-2** Prof. Colin Ophus (Lawrence Berkeley National Laboratory, USA)
 "New Dimensions in Phase Contrast Scanning Transmission Electron Microscopy"
- 16:10 - 16:30 **NIMS Talk S4-3** Dr. Naoyuki Kawamoto (Electron Microscopy Group/CBRM)
 "Thermal Transport Measurements Using Thermocouple Probing in Pulsed STEM"
- 16:30 - 18:30 Poster Session / Poster Award Presentations

CBRM: Center for Basic Research on Materials / The schedule and presentation titles are subject to change.