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## **Masaya SAKAKIBARA**

Institute of Low Temperature Science, Hokkaido University, Japan

Postdoctoral Researcher (JSPS-PD)

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### **Education :**

March 2020 B.S. in Department of Chemistry, School of Science, The University of Tokyo (Professor Eiichi Nakamura)

March 2022 M.S. in Department of Chemistry, School of Science, The University of Tokyo (Professor Eiichi Nakamura)

March 2025 Ph.D. in Department of Chemistry, School of Science, The University of Tokyo (Professor Eiichi Nakamura)

### **Major Research Interest :**

Exploration of nanoscopic phase dynamics of inorganic compounds in phase transitions or chemical reaction through high-resolution electron microscopic observation.

### **Research Experience :**

2020-2022 TAKUETSU Research Assistant, The Forefront Physics and Mathematics Program to Drive Transformation, The University of Tokyo (Professor Eiichi Nakamura, Professor Makiko Sasada)

2022-2025 Japan Society for the Promotion of Science Research Fellowship for Young Scientists JSPS DC1 (Professor Eiichi Nakamura, the University of Tokyo)

2025- Japan Society for the Promotion of Science Research Fellowship for Young Scientists JSPS PD (Professor Yuki Kimura, Hokkaido University)

**Awards and honors :**

Best Poster Award at the 77<sup>th</sup> Annual Meeting of the Japanese Society of Microscopy (The Japanese Society of Microscopy, 2021)

Poster Prize at the 11<sup>th</sup> Subway Seminar (Subway Seminar Executive Committee, 2021)

Excellence Award at the 63<sup>rd</sup> Science and Technology Film/Video Festival (Japan Science Foundation, 2022)

Best Discussion Award at the 62<sup>nd</sup> Tokai Young Ceramist Meeting (The Ceramic Society of Japan Tokai Branch, 2022)

Student Poster Award at the 51<sup>st</sup> Japan Conference on Crystal Growth (The Japanese Association for Crystal Growth, 2022)

Outstanding Presentation Award at the Forum for Graduate School Education Reform 2022 (Tohoku University, 2022)

Student Best Presentation Award at the 79<sup>th</sup> Annual Meeting of the Japanese Society of Microscopy (The Japanese Society of Microscopy, 2023)

JACG Best Presentation Award at the 52<sup>nd</sup> Japan Conference on Crystal Growth (The Japanese Association for Crystal Growth, 2023)

JSPS HOPE fellow at the 15<sup>th</sup> HOPE Meeting (Japan Society for the Promotion of Science, 2024)

CSJ Student Presentation Award, The 104<sup>th</sup> CSJ Annual Meeting (The Chemical Society of Japan, 2024)

JACG Young Researcher Poster Award at the 43<sup>rd</sup> Discussion Meeting on Crystal Growth (The Japanese Association for Crystal Growth, 2024)

JACG Discussion Award at the 43<sup>rd</sup> Discussion Meeting on Crystal Growth (The Japanese Association for Crystal Growth, 2024)

Best Poster Award at the 2<sup>nd</sup> Meso-Hierarchy for Rising Generation Meeting (Materials Science of Meso-Hierarchy, 2024)

Dean's Award of the Graduate School of Science (Graduate School of Science, the University of Tokyo, 2025)

President's Prize of the University of Tokyo (The University of Tokyo, 2025)

Springer Theses Award (Springer Nature, 2025)

**Publications :**

1. Capturing the Moment of Emergence of Crystal Nucleus from Disorder, Takayuki Nakamuro, Masaya Sakakibara, Hiroki Nada, Koji Harano, Eiichi Nakamura\*, *J. Am. Chem. Soc.* **2021**, *143*, 1763-1767. (*Highlighted in JACS Spotlights, J. Am. Chem. Soc.* **2021**, *143*, 1681-1682.)
2. Cinematographic Recording of a Metastable Floating Island in Two- and Three-Dimensional Crystal Growth, Masaya Sakakibara, Hiroki Nada, Takayuki Nakamuro\*, Eiichi Nakamura\*, *ACS Cent. Sci.* **2022**, *8*, 1704-1710.

3. 「塩化ナトリウムの結晶化のしくみ」 榎原雅也, 中室貴幸, 中村栄一, *化学と教育* **2024**, 72, 46-49.
4. Melting entropy of crystals determined by electron-beam-induced configurational disordering, Dongxin Liu, Jiarui Fu, Oren Elishav, Masaya Sakakibara, Kaoru Yamanouchi, Barak Hirshberg\*, Takayuki Nakamuro\*, Eiichi Nakamura\*, *Science* **2024**, 384, 1212-1219.
5. Kinetic Exploration of Nanoscale Polymorphs through Interface Energy Adjustment, Masaya Sakakibara, Takayuki Nakamuro\*, Eiichi Nakamura\*, *ACS Nano* **2024**, 18, 22325-22333.
6. Nondeterministic dynamics in the  $\eta$ -to- $\theta$  phase transition of alumina nanoparticles, Masaya Sakakibara, Minoru Hanaya, Takayuki Nakamuro\*, Eiichi Nakamura\*, *Science* **2025**, 387, 522-527.
7. 「ナノスケール結晶における動的平衡と多形選択」 中室貴幸, 榎原雅也, 中村栄一, *日本物理学会誌* **2025**, 80, 294-298.
8. Stochastic Interface Formation in Nanoscale Heterostructures Visualized by Atomic-Resolution Microscopy, Miyuki Hanazawa<sup>#</sup>, Masaya Sakakibara<sup>#</sup>(co-first), Ryo Ishikawa, Naoya Shibata, Takayuki Nakamuro\*, Eiichi Nakamura\*, *J. Am. Chem. Soc.* **2025**, 147, 34731-34741.

#### Invited Talks :

1. Masaya Sakakibara, Takayuki Nakamuro, Eiichi Nakamura, ““Seeing is believing” Surface Catalysis in Crystal Nucleation and Epitaxy”, 20<sup>th</sup> International Conference on Crystal Growth and Epitaxy, 105, Naples, August 2023
2. Masaya Sakakibara, Takayuki Nakamuro, “Visualization and Quantitative Analyses of Molecular Dynamics on Crystal Surfaces by Transmission Electron Microscopy”, Workshop for developments in in-situ observation and theory in phase transition dynamics at crystal surface, 2, Hokkaido, January 2024
3. Masaya Sakakibara, “Exploring the non-equilibrium dynamics in crystallization with atomic-resolution electron microscopy”, Japan Geoscience Union Meeting 2024, M-IS18, Chiba, May 2024
4. Masaya Sakakibara “Non-Deterministic Phase Dynamics in Nanoparticles Enabled by Surface Energy”, NIMS Electron Microscope Group Seminar, Ibaraki, February 2025