

25th iCeMS International Symposium
Self-Assembly Science for Unlocking Life's Secrets

11-12 January 2024, Kyoto University iCeMS
(as of 9 January)

Day 1 (11 January)

12:20–13:00 Registration

13:00-13:15 Opening remarks:

Motonari Uesugi (Director of iCeMS)

Akira Ukawa (Director of WPI Academy)

Session I Biological Assembly

(Chair Mineko Kengaku & Fuyuhiko Tamanoi)

13:15-13:45 **Makito Miyazaki** (RIKEN BDR / JST PRESTO)

Self-assembly of actin cytoskeletal dynamics in artificial cells

13:45-14:15 **Taki Nishimura** (PRESTO, JST/ Grad Sch of Med, Univ of Tokyo)

Deciphering the Secret Code Hidden in the ATG3 Amphipathic α -Helix

14:15-14:45 **Yuki Hattori** (Grad Sch of Med, Nagoya Univ)

Microglial colonization and roles in early brain development

14:45-15:15 Coffee Break

Session II Chemical Assembly

(Chair Easan Sivaniah & Aiko Fukazawa)

15:15-15:45 **Mao Fukuyama** (IMRAM, Tohoku Univ)

Quantitative analysis of amyloid nucleation in protein condensates

15:45-16:15 **Tomoko Inose** (iCeMS / Hakubi Center, Kyoto Univ / JST-PRESTO)

Plasmon-based nanowire endoscopy toward single live-cell interrogation

16:15-16:45 **Yoshiaki Shoji** (CLS, IIS, Tokyo Inst of Tech)

*Development of Functional Organoboron Compounds Based on a Concept
“Boron Vacant-Orbital Engineering”*

16:45-17:15 **Kohei Kusada** (iCeMS / Hakubi Center, Kyoto Univ / Grad Sch of Sci, Kyoto Univ)

Precise Control of Three-Dimensional Atomic Arrangement in Metal Nanoparticles

17:15- Group Photo

Day 2 (12 January)

Session III Manipulating Assembly

(Chair Daniel Packwood & Yuichi Taniguchi)

- 10:00-10:30 **Akira Kakugo** (Grad Sch of Sci, Kyoto Univ)
Dynamics and Functions of Biomolecular Motor based Active-Matter
- 10:30-11:00 **Miho Yanagisawa** (Grad School of Arts and Scis, Univ of Tokyo)
Cell-size confinement alters self-assembly of macromolecules: The secret of cell size
- 11:00-11:30 **Sooyeon Kim** (iCeMS)
Ultrasensitive bioanalyses based on single-molecule microscopic imaging
- 11:30-12:00 **Kosuke Okeyoshi** (Japan Adv Inst of Sci and Tech)
Polymeric sol-gel designs inspired by phase transition in living systems
- 12:00-13:00 Lunch

Session IV Mesoscale Assembly

(Chair Daishi Fujita & Shuhei Furukawa)

- 13:00-13:30 **Yukako Oda** (Center for iPS Cell Res and Appl)
Discovery of anti-inflammatory physiological peptides that assemble cell-cell adhesion factors
- 13:30-14:00 **Masashi Tachikawa** (Sch of Sci, Yokohama City Univ)
Force balance and self-assembly: key concepts in organelle shaping
- 14:00-14:30 **Ryo Suzuki** (CiMPhy, Inst for Adv Study, Kyoto Univ)
Active tissue deformation as a quantitative tool for the understanding of self-organisation in multi-cellular organisms - Development and disease -
- 14:30-15:00 **Yuta Suzuki** (iCeMS / JST PRESTO)
Rational Design of Functional Protein Assembly Toward the Creation of Bionanorobots
- 15:00- Closing remarks:
Jun Suzuki (iCeMS / Symposium organizing chair)