

One-Day International Symposium on Artificial Photosynthesis and Solar Energy Conversion

Organizers **Kyoto University iCeMS, JST, and the Academy of Finland**
Date **Tuesday, November 20, 2012**
Venue **Shiran Kaikan, Kyoto University**

- 09:00–09:10 Opening Remarks
Susumu Kitagawa (iCeMS, Kyoto University, Japan)
Hiroshi Imahori (iCeMS, Kyoto University, Japan)
- 09:10–09:50 **Villy Sundström** (Visiting Professor of iCeMS, Lund University, Sweden)
Charge Photogeneration, Separation and Recombination in Dye-Sensitized and Polymer:Fullerene Solar Cells
Chair: Helge Lemmetyinen (Tampere University of Technology, Finland)
- 09:50–10:20 **Nikolai V. Tkachenko** (Tampere University of Technology, Finland)
Photoinduced Electron Transfer in Porphyrin Base Donor-Acceptor Compounds: From Solutions to Organized Films
Chair: Helge Lemmetyinen (Tampere University of Technology, Finland)
- 10:20–10:50 Break
- 10:50–11:20 **Susumu Kitagawa** (iCeMS, Kyoto University, Japan)
Porous Coordination Polymers Having Optical Properties
Chair: Mikio Takano (Kyoto University, Japan)
- 11:20–11:50 Poster Briefing
- 11:50–12:50 Lunch & Poster Setup
- 12:50–13:50 Poster Session
- 13:50–14:30 **Nobuo Kamiya** (Osaka City University, Japan)
Crystal Structure of Oxygen-Evolving Photosystem II at a Resolution of 1.9 Å
Chair: Yoshie Harada (Kyoto University, Japan)
- 14:30–15:10 **Akiho Yokota** (Nara Institute of Science and Technology, Japan)
Functional Diversity of the Reaction of RuBisCO and its Related Proteins
Chair: Yoshie Harada (Kyoto University, Japan)
- 15:10–15:40 Break (Poster Showing)
- 15:40–16:20 **Prashant V. Kamat** (Visiting Professor of iCeMS, University of Notre Dame, USA)
Synchronizing Energy and Electron Transfer Processes in Quantum Dot Solar Cells
Chair: Koichiro Tanaka (Kyoto University, Japan)
- 16:20–16:50 **Hiroshi Imahori** (Kyoto University, Japan)
Photoinduced Charge Separation and Transport in Mesoscopic Materials
Chair: Koichiro Tanaka (Kyoto University, Japan)
- 16:50–17:30 **Itamar Willner** (Hebrew University of Jerusalem, Israel)
Photobioelectrochemical Cells
Chair: Hiroshi Sugiyama (Kyoto University, Japan)
- 17:30–17:40 Closing Remarks
Helge Lemmetyinen (Tampere University of Technology, Finland)

Poster Presentations

- P-1. *Photo-Induced Charge Separation and Computational Modeling*
Shozo Yanagida*
- P-2. *Porphyrim-Functionalized Fullerene Peapods*
Tomokazu Umeyama*, Junya Mihara, Hiroshi Imahori
- P-3. *1,7- And 1,6-Regioisomers of Pyrrolidinyl Substituted Perylene Diimide: Significantly Different Chemical Behavior and Excited-State Dynamics*
Rajeev K. Dubey, Marja Niemi, Kimmo Kaunisto, Alexander Efimov*, Nikolai V. Tkachenko, Helge Lemmetyinen
- P-4. *Complex of Carbon Nanotubes and Immunostimulatory CpG DNA for Effective Cancer Photothermal Therapy*
S. Zhou, Y. Hashida*, S. Kawakami, T. Umeyama, H. Imahori, T. Murakami, F. Yamashita, M. Hashida
- P-5. *Synthesis and Structure–Property Relationships of Novel π -Conjugated Benzo[b]phosphole Derivatives*
Hayashi Yukiko*, Matano Yoshihiro, Suda Kayo, Kimura Yoshifumi, Nakao Yoshihide, Imahori Hiroshi
- P-6. *Organic–Semiconductor Nanostructured Hybrids: Photoinduced Electron Transfer at Organic–Semiconductor Interface*
Kirsi Huttunen*, Nikolai V. Tkachenko, Helge Lemmetyinen
- P-7. *Single-Walled Carbon Nanotubes that can Effectively Generate Reactive Oxygen Species: Application to Photodynamic Therapy*
Mami Inada*, Murakami Tatsuya, Yoshinori Matoba, Mitsuru Hashida, Hiroshi Imahori
- P-8. *Photoinduced Charge Separation in Covalently Linked PyPDI- C_{60} Dyad and Its Use in Polymeric Solar Cell*
K. Kaunisto*, R. Dubey, P. Vivo, V. Manninen, M. Niemi, N. Tkachenko, H. Lemmetyinen
- P-9. *Oligothiophenes as Light Harvesting Small Molecules in Organic Solar Cells*
Venla M. Manninen*, Juha P. Heiskanen, Helge J. Lemmetyinen, Osmo E. O. Hormi
- P-10. *Effects of Dihydronaphthyl-Based [60]fullerene Bisadduct Regioisomers on Polymer Solar Cell Performance*
T. Miyata*, S. Kitaura, K. Kurotobi, Y. Takano, T. Umeyama, H. Imahori
- P-11. *Photoregulation of Cell Membrane Potential and Ion Transport by Charge-Separated State of Donor-Acceptor Linked Molecules in Cell Membrane*
T. Numata, T. Murakami*, F. Kawashima, N. Morone, John E. Heuser, Yuta Takano, Yasuo Mori, H. Imahori
- P-12. *Phase-Stable Organic Photon Upconverters for Efficient Solar Energy Utilization*
Yoichi Murakami*
- P-13. *Fusion of High-Density Lipoprotein Nanodisc and Gold Nanorod: Development and Characterization of Novel Organic-Inorganic Composite Nanomaterials*
Hirotaka Nakatsuji*, Tatsuya Murakami, Nobuhiro Morone, John E. Heuser, Mitsuru Hashida, Hiroshi Imahori
- P-14. *Photoinduced Electron Transfer in PDI- C_{60} Dyads*
Marja Niemi*, Rajeev K. Dubey, Nikolai V. Tkachenko, Alexander Efimov, Helge Lemmetyinen
- P-15. *Long-Lived Photoinduced Charge Separation in Supramolecules between $Li^+@C_{60}$ and Anionic Porphyrins*
Kei Ohkubo*, Yuki Kawashima, Shunchi Fukuzumi
- P-16. *Altering Interfacial Electronic Interactions between SAMs of Porphyrin Derivatives and Semiconductor Surfaces*
Hanna Saarenpää*, Essi Sariola-Leikas, Alexander Pyymaki Perros, Juha M. Kontio, Alexander Efimov, Hironobu Hayashi, Harri Lipsanen, Hiroshi Imahori, Helge Lemmetyinen, Nikolai V. Tkachenko
- P-17. *Intramolecular Electron Accepting and Donating System Based on Endohedral Metallofullerenes*
Y. Takano*, N. Mizorogi, M. A. Herranz, N. Martin, D. M. Guldi, S. Nagase, T. Akasaka

- P-18. *Triarylamine-Substituted Imidazole- and Quinoxaline-Fused Push-Pull Porphyrin for High Performance Dye-Sensitized Solar Cell*
Yuuki Toude*, Hironobu Hayashi, Abeda Sultana Touchy, Yuriko Kinjo, Kei Kurotobi, Hiroshi Imahori
- P-19. *Photoinduced Charge Separation in Pyrrolidinyl-Substituted Perylene Diimide (PyPDI)-Fullerene Dyads*
P. Vivo*, R. K. Dubey, K. Kaunisto, H. Lemmetyinen
- P-20. *Synthesis of Low Bandgap Polymers Based on Thienoquinodimethane Units and Their Applications to Bulk Heterojunction Solar Cells*
Y. Watanabe*, T. Umeyama, M. Odoi, D. Evgenia, H. Imahori
- P-21. *Memory Effects in Self-Assembled Monolayers of Porphyrins on TiO₂ Electrodes for Porphyrin-Sensitized Solar Cells*
Yuriko Kinjo*, Hironobu Hayashi, Kei Kurotobi, Hiroshi Imahori