

Program

Monday, June 26, 2017

Hougaku Hall

13:00 - 13:10 Opening Remarks

Yuji Yoshida (AIST, Japan)

13:10 - 13:50 Plenary Lecture

PL-1 (Plenary Lecture)

13:10 - 13:50 Charge and spin transport physics of organic semiconductors
Henning Sirringhaus (University of Cambridge, UK)

...040

13:50 - 14:10 Break

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Hougaku Hall

14:10 - 16:15 Topical Session 6 (Iontronics)

K-T6-001 (Keynote)

14:10 - 14:50 Interfacing with the brain using organic electronics
George Malliaras (École des Mines de St. Étienne, France)

...042

O-T6-001

14:50 - 15:05 Tunable ion adsorption kinetics on a nanoscale transistor towards iontronics applications
Nicolas Clement (NTT Basic Research Laboratories, Japan)

...043

K-T6-002 (Keynote)

15:05 - 15:45 Electrolyte gated transistors with floating gates as biosensors
C. Daniel Frisbie (University of Minnesota, USA)

...044

O-T6-002

15:45 - 16:00 Electrochemically stable electron-injection electrode for organic electrochemical transistors
Hidekazu Shimotani (Tohoku University, Japan)

...045

O-T6-003

16:00 - 16:15 New type of energy harvester with electric double layer electrets
Shimpei Ono (Central Research Institute of Electric Power Industry, Japan)

...046

16:15 - 17:10 Break and Poster Viewing

Monday, June 26, 2017

Koryu Hall

14:10 - 16:10 Session D (Bio-electronics, Bio-analysis and Bio-interfaces)

I-D-001 (Invited)

14:10 - 14:40 Development of micro/nano patterning methods for motor proteins and endothelial cells for their biophysical studies
Ryuji Yokokawa (Kyoto University, Japan)

...048

I-D-002 (Invited)

14:40 - 15:10 Biomimetic engineering for biosensing and bioscience
Tatsuro Goda (Tokyo Medical and Dental University, Japan)

...049

O-D-001

15:10 - 15:25 Design of bio-nano interfaces by self-assembled peptides and two-dimensional nanomaterials
Yuhei Hayamizu (Tokyo Institute of Technology, Japan)

...050

O-D-002

15:25 - 15:40 An ultra-thin LED light source with excitation filters for an implantable imaging devices
Kiyotaka Sasagawa (Nara Institute of Science and Technology, Japan)

...051

O-D-003

15:40 - 15:55 Cellular internalization of microparticles and its dependence on their surface properties
Noritaka Kato (Meiji University, Japan)

...052

O-D-004

15:55 - 16:10 Molecularly imprinted cavities prepared using specific ligands for high selective recognition of target proteins
Yuri Kamon (Kobe University, Japan)

...053

16:10 - 17:10 Break and Poster Viewing

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ANA Crowne Plaza, Room Ootori

17:10 - 19:10 Poster Presentation

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Hougaku Hall

9:15 - 9:55 Plenary Lecture

PL-2 (Plenary Lecture)

9:15 - 9:55 Biological principles for ultra-energy saving
Toshio Yanagida (Osaka University, Japan) ...056

9:55 - 10:30 Break and Photo

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Hougaku Hall

10:30 - 12:25 Topical Session 2 (Biosensing Technologies for Diagnostics)

K-T2-001 (Keynote)

10:30 - 11:10 Watching cancers evolve by liquid biopsy
Takahiro Ochiya (National Cancer Center Research Institute, Japan) ...058

O-T2-001

11:10 - 11:25 Light-induced acceleration of molecular recognition for DNA detection
Takuya Iida (Osaka Prefecture University, Japan) ...059

O-T2-002

11:25 - 11:40 On-site and reliable enumeration of total viable bacterial count in pasteurized milk using 'DEP-On-Go' sensor
Madhu Biyani (BioDevice Technology Ltd., Japan) ...060

O-T2-003

11:40 - 11:55 Development of a SNP typing in the low ionic PCR condition
Fumie Takei (National Defense Medical College, Japan) ...061

O-T2-004

11:55 - 12:10 Extremely sensitive quartz crystal microbalance gas detector using silver ion polyelectrolyte container
Seimei Shiratori (Keio University, Japan) ...062

O-T2-005

12:10 - 12:25 Development of an amperometric sensor for vancomycin-monitoring using molecularly imprinted polymer
André C. Ferreira (Shibaura Institute of Technology, Japan) ...063

12:25 - 13:40 Lunch

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Koryu Hall

10:30 - 12:30 Session B (Organic Devices)

I-B-001 (Invited)

10:30 - 11:00 Organic field-effect-transistor driven by electronic phase transition
Hiroshi M. Yamamoto (Institute for Molecular Science, Japan)

...066

I-B-002 (Invited)

11:00 - 11:30 Structural and materials design of thermoelectric fabrics using carbon nanotubes for wearable energy harvesters

Masakazu Nakamura (Nara Institute of Science and Technology, Japan)

...067

O-B-001

11:30 - 11:45 Spin-pump-induced spin transport in thermally evaporated pentacene films
Eiji Shikoh (Osaka City University, Japan)

...068

O-B-002

11:45 - 12:00 Copper(II) ion detection by an extended-gate type organic transistor
Tsuyoshi Minami (The University of Tokyo, Japan)

...069

O-B-003

12:00 - 12:15 Development of a flexible dual-gate organic pressure sensor
Heisuke Sakai (Japan Advanced Institute of Science and Technology, Japan)

...070

O-B-004

12:15 - 12:30 Carbazole dendrimers as multifunctional emitters for solution processed multilayered organic light-emitting diode
Kenichi Matsuoka (Kyushu University, Japan)

...071

12:30 - 13:40 Lunch

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Hougaku Hall

13:40 - 15:50 Topical Session 5 (Molecular Interfaces)

K-T5-001 (Keynote)

13:40 - 14:20 Controlling the electronic structure at interfaces in opto-electronic devices with functional molecules

Norbert Koch (Humboldt-Universität zu Berlin, Germany)

...074

I-T5-001 (Invited)

14:20 - 14:50 Molecular understanding of organic-organic interfaces

Denis Andrienko (Max Planck Institute for Polymer Research, Germany)

...075

O-T5-001

14:50 - 15:05 Origin of the orientation dependence of energy levels in molecular thin films: Impact of electrostatic interaction

Hiroyuki Yoshida (Chiba University, Japan)

...076

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| O-T5-002 | | | |
| 15:05 - 15:20 | Impact of orientation polarization in OLEDs studied by displacement current measurement and high-sensitivity photoemission | <u>Hisao Ishii</u> (Chiba University, Japan) | ...077 |
| O-T5-003 | | | |
| 15:20 - 15:35 | Electronic and structural properties of donor-acceptor type conjugated polymers: DFT and ESR studies | <u>Yukihiro Shimoj</u> (AIST, Japan) | ...078 |
| O-T5-004 | | | |
| 15:35 - 15:50 | Induced crystallization and polymorphism of [6,6]-phenyl-C ₆₁ -butyric acid methyl ester in thin films by surface segregated monolayers | <u>Seiichiro Izawa</u> (Institute for Molecular Science, Japan) | ...079 |
| 15:50 - 16:10 | Break | | |

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Koryu Hall

13:40 - 15:40 Topical Session 1 (Single Cell Measurements and Manipulations)

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|---------------------------|--|---|--------|
| I-T1-001 (Invited) | | | |
| 13:40 - 14:10 | Reconstitution and recording Ion channel activities in artificially formed cell membranes | <u>Ayumi Hirano-Iwata</u> (Tohoku University, Japan) | ...082 |
| O-T1-001 | | | |
| 14:10 - 14:25 | Heterogeneous response and adaptation of antibiotic-stressed clonal population of bacteria | <u>Miki Umetani</u> (The University of Tokyo, Japan) | ...083 |
| I-T1-002 (Invited) | | | |
| 14:25 - 15:55 | Extreme imaging for large-scale single-cell analysis | <u>Keisuke Goda</u> (The University of Tokyo, Japan) | ...084 |
| O-T1-002 | | | |
| 14:55 - 15:10 | Engineering neuronal circuits on nanowire scaffolds | <u>Vincent R. Daria</u> (Australian National University, Australia) | ...085 |
| I-T1-003 (Invited) | | | |
| 15:10 - 15:40 | CMOS-based integrated opto-electric neural interface devices | <u>Takashi Tokuda</u> (Nara Institute of Science and Technology, Japan) | ...086 |
| 15:40 - 16:10 | Break | | |

Tuesday, June 27, 2017

Hougaku Hall

16:10 - 18:20 Topical Session 3 (Singlet Fission)

K-T3-001 (Keynote)

16:10 - 16:50 Singlet fission: on the way to enhancing solar cells efficiencies
Alexandre Cheminal (University of Cambridge, UK)

...088

O-T3-001

16:50 - 17:05 Singlet fission in conjugated polymers
Yasunari Tamai (Kyoto University, Japan)

...089

O-T3-002

17:05 - 17:20 Organic light-emitting diodes using symmetric donor-acceptor-type delayed fluorescence emitters
Katsuyuki Shizu (Kyoto University, Japan)

...090

I-T3-001 (Invited)

17:20 - 17:50 Quantum dynamical aspects in biophysical systems and their applications for investigating molecular materials
Akihito Ishizaki (National Institutes of Natural Sciences, Japan)

...091

O-T3-003

17:50 - 18:05 Mechanism of singlet fission in π -stacked molecules: first principles calculations and quantum dynamics calculations
Hiroyuki Tamura (The University of Tokyo, Japan)

...092

O-T3-004

18:05 - 18:20 Characterization of triplet pairs generated by singlet fission
Tomoaki Yago (Saitama University, Japan)

...093

18:20 - 19:00 Break

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Koryu Hall

16:10 - 18:25 Session A (Materials, Fabrication and Characterization)

I-A-001 (Invited)

16:10 - 16:40 Single molecular junction towards single molecular electronics
Manabu Kiguchi (Tokyo Institute of Technology, Japan)

...096

O-A-001

16:40 - 16:55 New fundamental effects in single-molecule circuitry
Albert C. Aragonès (Universitat de Barcelona, Spain)

...097

O-A-002

16:55 - 17:10 Au nanoparticle single-electron transistor anchored by Sn-porphyrin self-assembled monolayer
Pipit U. Vivasari (Tokyo Institute of Technology, Japan)

...098

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|--------------------------|---|--------|
| I-A-002 (Invited) | | |
| 17:10 - 17:40 | Synthesis, structure and functions of coordination nanosheet (CONASH) <u>Hiroshi Nishihara</u> (The University of Tokyo, Japan) | ...099 |
| O-A-003 | | |
| 17:40 - 17:55 | Selective adsorption and sensing property of nano/microscale metal-organic framework materials <u>Wei-Yin Sun</u> (Nanjing University, China) | ...100 |
| O-A-004 | | |
| 17:55 - 18:10 | Study of trap-filling effect on carrier transport in fluorene co-polymer film by photo-luminescence decay imaging <u>Takaaki Manaka</u> (Tokyo Institute of Technology, Japan) | ...101 |
| O-A-005 | | |
| 18:10 - 18:25 | Study of the electrografting of two different diazonium salts on patterned gold electrodes <u>Florian Lebon</u> (Université Paris-Saclay, France) | ...102 |
| 18:25 - 19:00 | Break | |

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ANA Crowne Plaza, Room Ootori

19:00 - 21:00 Banquet

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Hougaku Hall

9:30 - 10:10 Plenary Lecture

PL-3 (Plenary Lecture)

9:30 - 10:10 Atomic switch networks as a biomorphic architecture for cognitive technology
James K. Gimzewski (National Institute for Materials Science, Japan) ...104

10:10 - 10:30 Break

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Hougaku Hall

10:30 - 12:30 Topical Session 4 (Next Era Computing Contributed by M&BE)

I-T4-001 (Invited)

10:30 - 11:00 Signals, circuits, and architectures in non-von Neumann computation
Ferdinand Peper (NICT, Japan) ...106

I-T4-002 (Invited)

11:00 - 11:30 Evolving functionality in nanomaterial networks
Wilfred G. van der Wiel (University of Twente, Netherlands) ...107

O-T4-001

11:30 - 11:45 Complex dynamics and promise for neuromorphic computation in self-assembled atomic-switch networks
S. K. Bose (University of Canterbury, New Zealand) ...108

I-T4-003 (Invited)

11:45 - 12:15 Network-based molecular electronics
Takuya Matsumoto (Osaka University, Japan) ...109

O-T4-002

12:15 - 12:30 On the growing polymer neural networks
Megumi Akai-Kasaya (Osaka University, Japan) ...110

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10:30 - 12:30 Session C (Energy Devices & Cells)

I-C-001 (Invited)

10:30 - 11:00 Photon upconversion based on molecular assemblies and nanomaterials
Nobuo Kimizuka (Kyushu University, Japan) ...112

O-C-001

11:00 - 11:15 Organophotocatalyst
Keiji Nagai (Tokyo Institute of Technology, Japan)

| | | |
|--------------------------|--|--------|
| | | ...113 |
| I-C-002 (Invited) | | |
| 11:15 - 11:45 | Solution-processed hybrid solar cells using colloidal quantum dot molecules <u>Takaya Kubo</u> (The University of Tokyo, Japan) | ...114 |
| O-C-002 | | |
| 11:45 - 12:00 | Control device structure to perform high efficient all-inorganic cesium perovskite solar cells <u>Teresa S. Ripolles</u> (Kyushu Institute of Technology, Japan) | ...115 |
| O-C-003 | | |
| 12:00 - 12:15 | Hysteresis analysis of organolead halide perovskite solar cells by transient current measurement <u>Tetsuhiko Miyadera</u> (AIST, Japan) | ...116 |
| O-C-004 | | |
| 12:15 - 12:30 | Investigation of control nano-structures and interface effects on planar perovskite solar Fabricated by Solution-Process <u>Md. Shahiduzzaman</u> (Kanazawa University, Japan) | ...117 |

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12:40 - 12:50 Closing Remarks

Hiroaki Usui (Tokyo University of Agriculture & Technology, Japan)