

Conference Program

December 14 (Tuesday)

- 08:30–09:00 **Registration**
- 09:00–09:10 **Welcome**
Kazuhiro Oiwa (NICT)
Mitumasa Iwamoto (Tokyo Institute of Technology)
- 09:10–09:30 **Special Session (Molecular Photonics and Informatics)**
Session Chair: Akira Otomo (NICT)
- 09:10–10:00 **<SS-1> Material Design, Self-Assembly, and Interface Engineering for High-Performance Polymer Solar Cells and Solid-State Lighting**
(Invited) °Alex K-Y Jen¹
¹Department of Materials Science and Engineering and Institute of Advanced Materials and Technology, University of Washington
- 10:00–10:30 **<SS-2> Hybrid Sol-Gel Silica/Electro-Optic Polymer Waveguide Modulators**
(Invited) °Yasufumi Enami¹
¹Hiroshima University, Research Institute for Nanodevice and Bio Systems
- 10:30–10:45 **Coffee Break**
Session Chair: Toshiki Yamada (NICT)
- 10:45–11:15 **<SS-3> Johnson-noise engines and demons**
(Invited) °Laszlo Kish¹
¹Dept. of Electrical and Computer Engineering, Texas A&M University, USA
- 11:15–11:45 **<SS-4> Exploiting fluctuations in circuits**
°Ferdinand Peper¹
¹Kobe Advanced ICT Research Center, National Institute of Information and Communications Technology
- 11:45–13:15 **Lunch**
- 13:15–14:25 **Session I (Nano-Interface Phenomena)**
Session Chair: Mitumasa Iwamoto (Tokyo Institute of Technology)
- 13:15–13:55 **<SI-1> Facile fabrication methods of organic transistors**
(Invited) °Takehiko Mori¹, Hiroshi Wada¹, Jun-ichi Inoue¹
¹Tokyo Institute of Technology
- 13:55–14:10 **<SI-2> Discotic Mesogenic Molecule with High Carrier Mobility in Excess of 1 cm²/Vs and Solution-Processable Bulk-Heterojunction Solar Cell**
°Masanori Ozaki¹, Yasuo Miyake^{1,2}, Tetsuro Hori¹, Takeshi Hayashi¹, Hiroyuki Yoshida¹, Akihiko Fujii¹, Yo Shimizu²
¹Graduate School of Engineering, Osaka University
²Nanotechnology Research Institute at Kansai Centre, National Institute of Advanced Industrial Science and Technology (AIST)
- 14:10–14:25 **<SI-3> Stabilization of domains in mixed membranes of saturated lipids, hybrid lipids, and cholesterol**
°Tetsuya Yamamoto¹, Robert Brewster¹, Samuel A. Safran¹
¹Department of materials and interfaces, Weizmann Institute of Science, Rehovot, Israel
- 14:25–14:40 **Coffee Break**
- 14:40–15:55 **Session II (Molecular Dynamics of Nano-Interface)**
Session Chair: Akihiko Sugimura (Osaka Sangyo University)
- 14:40–15:10 **<SII-1> Nature-like Synthetic Branched Chain Glycolipids: A Review on Chemical Structure and Assembly Property**
(Invited) °Rauzah Hashim^{1,2}, Akihiko Sugimura², Hiroyuki Minamikawa³
¹Department of Chemistry, University of Malaya, 50603 Kuala Lumpur, Malaysia
²Department of Information Systems Engineering, Faculty of Engineering, Osaka Sangyo University, 3-1-1 Nakagaito, Daito-shi, Osaka 574, 8530 Japan
³Nanotube Research Center (NTRC), National Institute of Advanced Industrial Science and Technology, AIST, Tsukuba Central 5, 1-1-1 Higashi, Tsukuba, Ibaraki, 305 8565, Japan

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- 15:10–15:40 <SII-2> **Icosahedral Formation of Nano-micro Capsules: An Mechanical Viewpoint**
(Invited) °Zhong-can Ou-Yang¹
¹Institute of Theoretical Physics, Chinese Academy of Sciences, Beijing, China
- 15:40–15:55 <SII-3> **Interfacial Restructuring of Ionic Liquids Determined by Sum-Frequency Generation Spectroscopy and X-ray Reflectivity**
°Doseok Kim¹, Yoonnam Jeon¹, Jaeho Sung¹, Wei Bu², David Vaknin², Yukio Ouchi³
¹Sogang University
²Ames Laboratory and Department of Physics and Astronomy, Iowa State University, Ames, Iowa 50011, USA
³Department of Chemistry, Graduate School of Science, Nagoya University, Nagoya 464-8602, Japan
- 16:00–17:00 **Short Presentation I***
- 17:00–19:00 **Poster Session I**
Session Chair: Takaaki Manaka (Tokyo Institute of Technology)
- <PI-1>* **Femto-second Laser Reduction of Silver Ion and Nano-wire Fabrication**
°Masao Hitomi¹, Ryotaro Nakamura¹, Wataru Sakai¹, Naoto Tsutsumi¹
¹Graduate School of Science and Technology, Kyoto Institute of Technology
- <PI-2>* **Fabrication of low background two-dimensional Ta₂O₅ photonic crystals for observing fluorescence enhancement of organic dyes**
°Takahiro Kaji¹, Toshiki Yamada¹, Rieko Ueda¹, Akira Otomo¹
¹Kobe Advanced ICT Research Center, National Institute of Information and Communications Technology, Japan
- <PI-3>* **Electro-Optic Polymer and Silicon Hybrid Photonics in Slotted Photonic Crystal Waveguides**
°Shin-ichiro Inoue¹, Akira Otomo¹
¹Kobe Advanced ICT Research Center, National Institute of Information Technology (NICT), Kobe, Japan
- <PI-4>* **Bio-molecular / Semiconductor Hybrid System for Molecular Sensor**
°Yoshitake Masuda¹, Tatsuki Ohji¹, Kazumi Kato¹, Masako Ajimi², Makoto Bekki², Shuji Sonezaki²
¹National Institute of Advanced Industrial Science and Technology (AIST), Japan
²TOTO Ltd. Research Laboratory, Japan
- <PI-5>* **Controlled motion of dynein-microtubule system by patterned resist polymer**
°Norihiko Ashikari^{1,2}, Yuji Shitaka², Hiroyuki Sakaue¹, Takayuki Takahagi¹, Hiroaki Kojima², Kazuhiro Oiwa², Hitoshi Suzuki¹
¹Graduate School of Advanced Sciences of Matter, Hiroshima University, Hiroshima, Japan
²National Institute of Information and Communications Technology, Kobe, Japan
- <PI-6>* **New Genetic Transistor for DNA Sequencing**
°Hiroyuki Iechi^{1,2}, Akira Yasuno², Shigekazu Kuniyoshi², Kazuhiro Kudo²
¹Advanced Technology R&D Center, Research and Development Group, Ricoh Co., Ltd., Yokohama, Japan
²Graduate school of Engineering, Chiba University, Chiba, Japan
- <PI-7>* **Transmission Surface Plasmon Resonance Enhanced Microfluidic Biosensing**
°Ryuta Kato¹, Takao Oseki¹, Akira Baba¹, Kazunari Shinbo¹, Keizo Kato¹, Futao Kaneko¹, Gareth Sheppard², Jason Locklin²
¹Graduate School of Science and Technology, Niigata University, Japan
²Department of Chemistry and Faculty of Engineering, University of Georgia, USA
- <PI-8> **Temperature Dependence of Open-Circuit Voltage of Multilayered and Bulk Heterojunction Solar Cells**
°Kenta Okuhara¹, Eiji Itoh¹
¹Department of Electrical and Electronic Engineering, Shinshu University, Nagano, Japan

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- <PI-9> Doping effect on diffraction efficiency in polymer DOE by irradiation of femtosecond laser pulse**
°Hiroyuki Mochizuki¹, Wataru Watanabe¹, Yasuyuki Ozeki², Kazuyoshi Itoh², Katsumi Matsuda³, Satoshi Hirono³
¹National Institute of Advanced Industrial Science and Technology (AIST)
²Osaka University
³Omron Corporation
- <PI-10> Nanostructure and optical properties of CdS:O thin films**
°Akinori Suzuki¹, Kazuki Wakita¹, YongGu Shim², Nazim Mamedov³, Ayaz Bayramov³, Emil Huseynov³
¹Department of Electrical, Electronics and Computer Engineering, Chiba Institute of Technology, Chiba, Japan
²Department of Physics and Electronics, Osaka Prefecture University, Osaka, Japan
³Institute of Physics, Baku, Azerbaijan
- <PI-11> Reduction of pitch of nanohole array by self-organizing anodic oxidation after pre-patterning with IBE on the surface of Al film.**
°Yasuharu Ishida¹, Shukiti Tanaka², Tomohiro Shimizu¹, Shoso Shinguhara¹
¹Kansai University, Osaka, Japan
²National Institute of Information and Communication Technology, Hyogo, Japan
- <PI-12> Ultrasonic wave induced mechanoluminescence**
°Nao Terasaki¹, Hiroshi Yamada¹, Chao-Nan Xu^{1,2}
¹National Institute of Advanced Industrial Science and Technology (AIST), Measurement Sensing technology Research Center
²CREST, Japan Science and Technology Agency (JST)
- <PI-13>* Syntheses of cationic Au(I) complexes and systematic control of photoluminescence in crystalline state**
°Masashi Saitoh¹, Junpei Yuasa¹, Takuya Nakashima¹, Tsuyoshi Kawai¹, Kazuya Tada², Mitsuyoshi Onoda²
¹Graduate School of Materials Science, Nara Institute of Science and Technology, Nara, Japan
²Department of Electrical Engineering, University of Hyogo, Hyogo, Japan
- <PI-14>* Plasmonic Molecular Junction Capable of Optical and Electronic Multi-probe *In-situ* Vibrational Spectroscopy**
°Masato Maitani¹, Orlando M. Cabarcos², David L. Allara², Heayoung Yoon³, Theresa S. Mayer³
¹Department of Applied Chemistry, Tokyo Institute of Technology, Tokyo, Japan
²Department of Chemistry, The Pennsylvania State University, University Park, PA, 16802, USA
³Department of Electrical Engineering, The Pennsylvania State University, University Park, PA 16802, USA
- <PI-15>* SHAPE AND LOCATION OF CHARGE WAVES IN IONIC POLYMETHINE SYSTEMS IN ELECTRIC FIELD**
°Svetlana Vasylyuk¹, Valery M. Yaschuk¹, Anatoly D. Suprun¹, Oleksiy D. Kachkovsky², Dmytro Melnyk¹
¹Kyiv National Taras Shevchenko University, Kyiv, Ukraine
²Institute of Organic Chemistry, National Academy of Sciences, Murmanska 5, Kyiv, Ukraine
- <PI-16>* The electronical processes in single organic molecules of calixarenes and their derivatives**
°Svetlana Vasylyuk¹, Valery M. Yaschuk¹, Alexandr A.A. Marchenko³, Oleksiy D. Kachkovsky², Vsevolod Cherepanov³
¹Kyiv National Taras Shevchenko University, Kyiv, Ukraine
²Institute of Organic Chemistry, National Academy of Sciences, Murmanska 5, Kyiv, Ukraine
³Institute of Physics Nauky av. 46, Kyiv 680028, Ukraine
- <PI-17> The effect of backflow on the field-induced director alignment process: Nuclear Magnetic Resonance study and theoretical analysis**
°A. Sugimura¹, A. Vakulenko², A. Zakharov²
¹Department of Information Systems Engineering, Osaka Sangyo University, Osaka, Japan
²Saint Petersburg Institute for Machine Sciences, the Russian Academy of Sciences, Saint Petersburg, Russia

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- <PI-18> Photo-induced alignment of liquid crystal molecules by using perfluoropolymer films**
°Kiyooki Usami¹
¹Department of Information Systems Engineering, Osaka Sangyo University
- <PI-19> TRM-SHG experiment on pre-charged organic field-effect transistor reveals inhomogeneous energetic disorder distribution in the devices**
°Fei Liu¹, Takaaki Manaka², Jack Lin², Mitsumasa Iwamoto²
¹Center for Advanced Study, Tsinghua University, Beijing, China
²Department of Physical Electronics, Tokyo Institute of Technology, 2-12-1 O-okayama, Meguro-ku, Tokyo 152-8552, Japan
- <PI-20> Degradation of organic light emitting diodes with cleaned ITO and MoO₃ hole-injection layer**
°Tadashi Kishimoto¹, Kazuhiro Wako¹, Kuniharu Matsuda², Hirofumi Iguchi², Taiju Tsuboi³
¹Research Institute for Advanced Liquid Crystal Technology, Aomori, Japan
²Tohoku Device Co.,Ltd.
³Faculty of Engineering, Kyoto Sangyo University
- <PI-21> Orientation of metal phthalocyanine on a rubbed polyethersulfone**
Sung-Taek Hur¹, °Suk-Won Choi¹
¹Department of Advanced Materials Engineering for Information & Electronics, Kyung Hee University, Gyeonggi-do, Korea
- <PI-22> Electroluminescence Enhanced at Electrode Interface in ITO/Tetracene/Al Diodes**
°Atsuo Sadakata¹, Yuki Ohsima¹, Dai Taguchi¹, Masahiro Fukuzawa², Takaaki Manaka¹, Mitsumasa Iwamoto¹
¹Department of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan
²Department of Electrical Engineering and Information Technology, Kyushu Sangyo University, Fukuoka, Japan
- <PI-23>* Enhanced Performance of C60 Organic Field Effect Transistors Using Tris(8-hydroxyquinoline) Aluminum(Alq3) Buffer Layer**
Hong Zheng^{1,2}, °Xiao_man Cheng^{1,2,3}, Hai_jun Tian^{1,2}, Geng Zhao^{2,3}, Shou_gen Yin^{1,2}
¹Institute of Material Physics, Tianjin University of Technology, Tianjin 300384, China.
²Key Laboratory of Display Material and Photoelectric Devices, Ministry of Education, Tianjin University of Technology, Tianjin, China.
³School of Science, Tianjin University of Technology, Tianjin, China.
- <PI-24> Carrier Conduction Characteristics in P3HT: PCBM Bulk Heterojunction Structures Under Sunlight Illumination**
°Yanhui Lou¹, Zhaokui Wang¹, Shigeki Naka¹, Hiroyuki Okada¹
¹Graduate School of Science & Technology, University of Toyama
- <PI-25>* A single organic device integrating light-emitting and a field-effect behavior**
Zi_yang Hu^{1,2}, °Xiao_man Cheng^{1,2,3}, Hong Zheng^{1,2}, Ren_lei Wu^{1,2}, Qing_chuan Hou^{1,2}, Zhong_qiang Wang^{1,2}, Shou_gen Yin^{1,2}
¹Institute of Material Physics, Tianjin University of Technology, Tianjin, China
²Key Laboratory of Display Material and Photoelectric Devices, Ministry of Education, Tianjin University of Technology, Tianjin, China.
³School of Science, Tianjin University of Technology, Tianjin, China.
- <PI-26>* Probing of Transient Electric Field Distribution in ITO/PI/P3HT/Au Using Time-Resolved Second Harmonic Generation Measurement**
°Ryo Miyazawa¹, Dai Taguchi¹, Takaaki Manaka¹, Mitsumasa Iwamoto¹
¹Department of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan
- <PI-27>* Spectrally-Narrowed Emissions from a Layered Organic Transistor Equipped with a Diffraction Grating**
°Yoshitaka Makino¹, Taiki Hinode¹, Akinori Okada¹, Naoto Tsutsumi¹, Shu Hotta¹
¹Department of Macromolecular Science and Engineering, Graduate School of Science and Technology, Kyoto Institute of Technology, Japan

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- <PI-28>* Thick polymer blend organic solar cells fabricated by slow-drying process**
°Hiroyuki Ogo¹, Toshihiro Yamanari¹, Tetsuya Taima^{1,2}, Jun Sakai³, Jun Tsukamoto⁴, Yuji Yoshida¹
¹Research Center for Photovoltaics, National Institute of Advanced Industrial Science and Technology(AIST), Tsukuba, Japan
²JST-PRESTO, Japan Science and Technology Agency (JST)
³Advanced Technologies Development Laboratory, Panasonic Electric Works, Ltd.
⁴Electronic and Imaging Materials Research Laboratories, Toray Industries, Inc.
- <PI-29>* Controlled growth of organic thin films for photovoltaic applications**
°Ying Zhou¹, Tetsuya Taima^{1,2}, Yosei Shibata^{1,3}, Tetsuhiko Miyadeara¹, Toshihiro Yamanari¹, Yuji Yoshida¹
¹Research Center for Photovoltaics, National Institute of Advanced Industrial Science and Technology (AIST)
²JST-PRESTO, Japan Science and Technology Agency (JST)
³Tokyo Institute of Technology
- <PI-30>* Nonlithographic fabrication of a submicron-channel organic field-effect transistor using a controllable electrospun single fiber as a shadow-mask**
°Yuya Ishii¹, Heisuke Sakai¹, Hideyuki Murata¹
¹School of Material Science, Japan Advanced Institute of Science and Technology, Ishikawa, Japan
- <PI-31> Effect of thermal treatment and crystallinity of poly(3-hexylthiophene) on poly(3-hexylthiophene) based bulk heterojunction photovoltaic cells**
°Kiyonori Komuta¹, Yasuhiko Hayashi¹, Ichiko Yamada¹, S. Ma¹, T. Soga¹, T. Jimbo¹, N. Kishi¹
¹Department of Frontier Materials, Nagoya Institute of Technology, Nagoya, Japan
- <PI-32> Synthesis and characterization of newly synthesized thienylenevinilene oligomers towards polymer characteristics**
°Kanako Tahara¹, Arnaud Dauendorffer¹, Shinya Oku¹, Nagamatsu Shuichi³, Wataru Takashima², Keiichi Kaneto¹
¹Graduate School of LSSE
²Center for Advanced Eco-fitting Technology, Kyushu Institute of Technology
³Graduate School of CSE, Kyushu Institute of Technology
- <PI-33> Effects of Different Molecular Weights Polystyrene as Gate Insulator in Organic Thin-Film Transistors**
°Sung Woo Lee¹, Dong Wook Kim¹, Jeong Cheol Noh¹, Jae Hoon Park¹, Jong Sun Choi¹
¹Department of Electrical, Information & Control Engineering, Hongik University, Seoul, Korea
- <PI-34> Reduced Surface Roughness of Organic Thin Film Fabricated by Electrospray Deposition Technique with Additional Organic Solvent**
°Takeshi Fukuda¹, Takashi Asano¹, Hirotaka Asaki¹, Kenji Takagi¹, Zentaro Honda¹, Norihiko Kamata¹, Jungmyong Ju², Tetsuya Aoyama², Yutaka Yamagata²
¹Department Functional Materials Science, Saitama University
²RIKEN
- <PI-35> Characteristics of White OLED using Zn(HPQ)2 and varying the Thickness of BCP**
°Dong-Eun Kim¹, Jun-Woo Park¹, Byoung-Sang Kim¹, Hyen-Wook Kang², Burm-Jong Lee², Hyun Joo Youn³, Young-Soo Kwon¹
¹Department of Electrical Engineering & NTRC, Dong-A University, Busan, Korea
²Department of Chemistry, Inje University, Gimhae, Korea
³Department of Biotechnology and Biomedical Sciences, Inje University, Gimhae, Korea
- <PI-36> Flexible Pentacene Thin Film Transistors with Cyclo Olefin Polymer as a Gate Dielectric**
°Rongbin Ye¹, Tomohiro Oyama¹, Koji Ohta¹, Mamoru Baba¹
¹Faculty of Engineering, Iwate University, Morioka, Japan
- <PI-37> A study of localized-state distributions in P3HT:PCBM blend solar cells by Impedance Spectroscopy**
°Hiroyuki Hase¹, Ryota Ikai¹, Takashi Nagase^{1,2}, Takashi Kobayashi^{1,2}, Hiroyoshi Naito^{1,2,3}
¹Department of Physics and Electronics Osaka Prefecture University, Osaka, Japan
²The Research Institute for Molecular Electronic Devices, Osaka, Japan
³CREST-JST, Tokyo, Japan

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- <PI-38> Mobility measurement of a rubrene single crystal by a lateral time-of-flight method**
°Naoki Ogawa¹, Akihiro Funakoshi¹, Yasuo Nakayama², Yutaka Noguchi^{1,2}, Hisao Ishii^{1,2}
¹Graduate School of Advanced Integration Science, Chiba University, Chiba, Japan
²Center for Frontier Science, Chiba University, Chiba, Japan
- <PI-39> Photoluminescence properties of copolymers with iridium-complex Ir(thq)₂(dbm) units in the fluorene main chain**
°Taiju Tsuboi¹, Hui-Fang Shi², Yosuke Nakai¹, Shu-Juan Liu², Qiang Zhao², Wei Huang²
¹Faculty of Engineering, Kyoto Sangyo University, Kyoto, Japan
²Institute of Advanced Materials, Nanjing University of Posts and Telecommunications, Nanjing, China
- <PI-40> Electric current during electrophoretic deposition of conjugated polymer: A test with various electrode distances**
°Kazuya Tada¹, Mitsuyoshi Onoda¹
¹Division of Electrical Engineering, University of Hyogo
- <PI-41> Preparation of Chiral Poly(diacetylene) Film on Chiral Surface**
°Hideki Kohn¹, Tatsunori Shino¹, Yuki Ohshima¹, Takaaki Manaka¹, Mitsumasa Iwamoto¹
¹Department of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan
- <PI-42> Analysis on the Pentacene and Insulator Interface Using Capacitance-Voltage Characteristics in MIS Capacitors for Transistor Application**
°Dongwook Kim¹, Jaehoon Park^{1,2}, Jeongcheol Noh¹, Sungwoo Lee^{1,3}, Jong Sun Choi¹
¹Department of the Electrical Information and Control Engineering, Hongik University, Seoul Korea
²School of Engineering and Computing Sciences, Durham University, Durham, United Kingdom
³Department of Chemical Engineering, Hongik University, Korea
- <PI-43> Stabilization of organic field-effect transistors in Dibenzotetrathiafulvalene Derivatives Substituted by tert-Butyl Groups**
°Junki Nagakubo¹, Minoru Ashizawa¹, Takehiko Mori¹
¹Tokyo Institute of Technology, Tokyo, Japan
- <PI-44> Gate-induced interfacial electronic states observed in an organic Mott insulator field effect transistor**
°Masatoshi Sakai¹, Masato Ishiguro¹, Mitsutoshi Hanada¹, Yuya Ito¹, Tomoki Takahara¹, Masakazu Nakamura¹, Kazuhiro Kudo¹
¹Department of Electrical and Electronic Engineering, Chiba University, Chiba, Japan
- <PI-45> In Situ Observation of Time-resolved Absorption Spectra of Electron Transfer Reaction of Cytochrome c by Slab Optical Waveguide Spectroscopy**
°Naoki Matsuda¹, Takahiro Okabe¹, Akiko Takatsu¹, Kenji Kato¹
¹Measurement Solution Research Center, AIST
- <PI-46> Development of submicron gap electrodes fabrication and electric transport property of magnetic hollow sphere**
°Toshifumi Terui¹, Takashi Nagase², Shukichi Tanaka¹, Rieko Ueda¹, Ye Quan-Lin³, Hirofumi Yoshikawa³, Kunio Awaga³
¹Kobe Advanced ICT Research Center, National Institute of Information and Communication Technology
²Graduated School of Engineering, Osaka Prefecture University
³Department of Chemistry, Nagoya University
- <PI-47> Electronics Application of Micro-patterned CNT and CNT/UV-resin composite by Soft UV-nanoimprint lithography**
°Phetphouchay Eksouriya¹, Eiji Itoh¹
¹Department of Electrical and Electronic Engineering, Shinshu University, Nagano, Japan
- <PI-48> Effects of an Interface Monolayer on Pentacene Organic Field-Effect Transistors**
°Wei Ou-Yang¹, Martin Weis², Takaaki Manaka¹, Mitsumasa Iwamoto¹
¹Department of Physical Electronics, Tokyo Institute of Technology, Japan
²Institute of Physics, Slovak Academy of Sciences, Slovak Republic
- <PI-49> Study of trap-controlled carrier mobility in pentacene field effect transistors by time-resolved optical second harmonic generation**
°Yasuyuki Tanaka¹, Takaaki Manaka¹, Mitsumasa Iwamoto¹
¹Department of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan

Conference Program

<PI-50> Study of carrier behaviour of Pentacene Organic Field-effect Transistors with introducing of Ag Nanoparticles Self-assembled Monolayer (SAM)

^oKeanchuan Lee^{1,2}, Martin Weis², Jack Lin¹, Dai Taguchi¹, Takaaki Manaka¹, Eva Majkova², Mitsumasa Iwamoto¹

¹Department of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan

²Institute of Physics, Slovak Academy of Sciences, Bratislava, Slovakia

December 15 (Wednesday)

08:30–09:00

Registration

09:00–11:40

Joint Session (Nano-Interface Fabrication and Bioelectronics)

Session Chair: Toshifumi Terui (NICT)

09:00–09:40

<JS-1> The Development of Bioelectronics: Electrochemical Label-free Biosensing for Healthcare Diagnostics

(Invited)

^oAndrew Mount¹, Ilenia Ciani¹, Stuart Evans¹, Elena Ferapontova¹, Jon Terry², Holger Schulze³, Gerard Giraud⁴, Anthony Walton², Jason Crain⁴, Peter Ghazal³, Till Bachmann³

¹School of Chemistry, The University of Edinburgh

²Institute of Integrated Micro and Nano Systems, Scottish Microelectronics Centre, School of Engineering and Electronics, University of Edinburgh

³The Division of Pathway Medicine, The University of Edinburgh

⁴School of Physics, The University of Edinburgh

09:40–09:55

<JS-2> Fabrication of Highly Conductive Langmuir-Blodgett Films based on Alkylammonium-Au(dmit)₂ Salt

^oYasuhiro F. Miura¹, Naoki Sugimoto¹, Hironari Akiyama¹, Kyoko Inoue¹, Jun-ichi Hoshino¹, Michio Sugi¹, Hiroyuki Hasegawa²

¹Graduate School of Engineering, Toin University of Yokohama, Yokohama, Japan

²JST PRESTO, Kobe Advanced ICT Research Center (KARC), National Institute of Information and Communications Technology (NICT)

09:55–10:20

<JS-3> Fabrication of Various Nanowires Using AAO Template for Preparation of Building Blocks of Highly Functional Nanodevices and Sensors

(Invited)

^oShoso Shingubara¹

¹Graduate School of Engineering, Kansai Univ

10:25–10:40

Coffee Break

Session Chair: Shukichi Tanaka (NICT)

10:40–11:10

<JS-4> Construction of organized nano-structures by DNA self-assembly

(Invited)

^oYuichi Ohya¹

¹Department of Chemistry and Materials Engineering, Kansai University, Suita, Osaka, Japan

11:10–11:25

<JS-5> An Observation of Diamond-Shaped Particle Structure in a Soya Phosphatidylcholine and Bacteriorhodopsin Composite Langmuir Blodgett Film Fabricated by Multilayer Molecular Thin Film Method

^oYutaka Tsujiuchi¹

¹Department of Material Science and Engineering, Akita University

11:25–11:40

<JS-6> Theoretical Study of Quantum Dots/Organic Ligands Interface

^oRodion Belosludov¹, Hiroshi Mizuseki¹, Atsuo Kasuya², Yoshiyuki Kawazoe¹

¹Institute for Materials Research, Tohoku University

²Center for Interdisciplinary Research, Tohoku University, Sendai 980-8578, Japan

11:40–13:00

Lunch

13:00–15:30

Session III (Molecular Electronics and Photonics)

Session Chair: Kazuhiro Kudo (Chiba University)

13:00–13:30

<SIII-1> Molecular Field-Effect Transistors with Orbital Gating

(Invited)

^oTakhee Lee¹

¹Gwangju Institute of Science and Technology

13:30–14:00

<SIII-2> Surface adsorption, diffusion, and selective interactions of functional organic molecules studied by scanning tunneling microscopy

(Invited)

^oTakashi Yokoyama¹

¹Graduate School of Nanobioscience, Yokohama City University, Yokohama, Japan

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- 14:00–14:15 <SIII-3> **Spectroscopic Determination of Molecular Stacking Structure for PCBM Thin Films**
°Gap Soo Chang^{1,2}, Paul Bazylewski¹, Jay Forrest¹, Hirokazu Tada²
¹Department of Physics and Engineering Physics, University of Saskatchewan, Saskatoon, Canada
²Division of Materials Physics, Graduate School of Engineering Science, Osaka University, Toyonaka, Japan
- 14:15–14:30 **Coffee Break**
Session Chair: Takashi Kobayashi (Osaka Prefecture University)
- 14:30–15:00 <SIII-4> **Self-assembled photonic crystals for organic solid-state lasers**
(Invited) °Seiichi Furumi¹
¹National Institute for Materials Science (NIMS), Ibaraki, Japan
- 15:00–15:15 <SIII-5> **Novel Fluorescent Aggregates of Rhodamine Dyes and Their Controlled Switching to Dequenched State: Contribution of Surface SiO₂ Layer**
°Akihiro Tomioka¹, Takaya Takeuchi¹, Kazuhisa Iwamoto¹, Takahiro Anzai¹
¹Graduate School of Engineering, Osaka Electro-Communication University, Osaka, Japan
- 15:15–15:30 <SIII-6> **Conformational Change of Oligoaniline Revealing Memorister-type Conductance Switching for Molecular Junction Device**
°Masato Maitani¹, Orlando M. Cabarcos², David L. Allara², Heayoung Yoon³, Theresa S. Mayer³
¹Department of Applied Chemistry, Tokyo Institute of Technology, Tokyo, Japan
²Department of Chemistry, The Pennsylvania State University, University Park, PA, 16802, USA
³Department of Electrical Engineering, The Pennsylvania State University, University Park, PA 16802, USA
- 15:30–16:20 **Short Presentation II***
16:20–18:20 **Poster Session II**
Session Chair: Kiyooki Usami (Osaka Sangyo University)
- <PII-1> **Superfocusing of surface plasmons using waveguide-based SOI structures**
°Kazuhiro Yamamoto¹, Shiyoshi Yokoyama¹, Junichi Takahara², Akira Otomo³
¹Institute for Materials Chemistry and Engineering, Kyushu University, Fukuoka, Japan
²Graduate School of Engineering, Osaka University, 2-1 Yamadaoka, Suita, Osaka, 565-0871, Japan
³National Institute of Information and Communications Technology (NICT), 588-2 Iwaoka, Nishi-ku, Kobe, Hyogo 651-2492, Japan
- <PII-2> **Optimization of microscope unit for studying fluorescence emitters under high-vacuum and ambient gas conditions: Optical properties for various ionic Liquids as a refractive index matching medium**
°Toshiki Yamada¹, Akira Otomo¹
¹Kobe Advanced ICT Research Center, National Institute of Information and Communications Technology
- <PII-3> **Study of energy transfer in porphyrin array on metallic surface**
°Akira Otomo¹, Ryo Naraoka¹, Yukito Naitoh¹, Toshiya Kamikado¹, Toshifumi Terui¹
¹Kobe Advanced ICT Research Center, National Institute of Information and Communications Technology
- <PII-4> **Preparation of Amperometric Glucose Biosensor Based on 4-Mercaptobenzoic Acid Self-Assembled on Gold**
°Huihui Wang¹, Hitoshi Ohnuki¹, Hideaki Endo², Mitsuru Izumi¹
¹Faculty of Marine Technology, Tokyo University of Marine Science and Technology, Tokyo, Japan
²Faculty of Marine Science, Tokyo University of Marine Science and Technology, Tokyo, Japan
- <PII-5> **Oriented Thin Films of Perylene-tetracarboxylic Diimide on Friction-Transferred Polymer Films**
°Nobutaka Tanigaki¹, Claire Heck¹, Toshiko Mizokuro¹
¹Research Institute for Ubiquitous Energy Devices, National Institute of Advanced Industrial Science and Technology (AIST)

Conference Program

- <PII-6> Time and frequency response characteristics of a bacteriorhodopsin photosensor**
°Katsuyuki Kasai¹, Yoshihiro Haruyama¹, Hiroshi Kikuchi², Toshifumi Terui¹, Yoshiko Okada-Shudo³, Akira Otomo¹
¹Kobe Advanced ICT Research Center, National Institute of Information and Communications Technology, Kobe, Japan,
²NHK STRL, ³The University of Electro-Communications
- <PII-7> Evaluation of aligned carbon nanotube thin film modified by an Argon-ion sputtering method**
°Fukunori Izumida^{1,2}, Rongbin Ye², Koji Ohta², Mamoru Baba², Michiko Kusunoki³
¹Electronics Course, Iwate Industrial Technology Junior College, Iwate, Japan
²Graduate School of Engineering, Iwate University, Morioka, Japan
³EcoTopia Science Institute, Nagoya University, Nagoya, Japan
- <PII-8> Fabrication of Polymeric Long AFM Probes for Scanning Cultured Cells**
°Hyen-Wook Kang¹, Hiroshi Muramatsu², Burm-Jong Lee¹, Young-Soo Kwon³
¹Department of Chemistry, Inje University, Gimhae, Korea
²School of Bioscience & Biotechnology, Tokyo University of Technology, Tokyo, Japan
³Department of Electrical Engineering & NTRC, Dong-A University, Busan, Korea
- <PII-9> Morphological Control of Conductive Polymers**
°Mitsuyoshi Onoda¹, Masayuki Okada¹, Kazuya Tada¹
¹Graduate School of Engineering, University of Hyogo, Hyogo, Japan
- <PII-10>* Spontaneous Formation of Silver Nanoparticles Assembly by Using Organic-aqueous Interface**
°Kosuke Sugawa¹, Yukimasa Tanoue¹, Daido Tanaka¹, Tatsuya Sakai¹
¹College of Science Technology, Nihon University
- <PII-11>* Analysis of annealing effects of amorphous carbon thin films on metal oxide substrates**
°Takuya Noguchi^{1,2}, Koji Ishibashi², Tetsuya Hasegawa¹, Toshihiro Shimada³
¹Department of Chemistry, The University of Tokyo, Tokyo, Japan
²Advanced Device Laboratory, RIKEN Advanced Science Institute
³Division of Materials Chemistry, Hokkaido University
- <PII-12>* Preparation of Poly(vinylcarbazole) Thin Films Tethered to Substrate Surface Through Self-Assembled Monolayer Having Benzophenone End Group**
°Hanae Ohtsuka¹, Seong-Ho Kim¹, Maria Celeste R. Tria², Rigoberto C. Advincula², Hiroaki Usui¹
¹Department of Organic and Polymer Materials Chemistry, Tokyo University of Agriculture and Technology, Tokyo, Japan,
²University of Houston
- <PII-13> Dye-Sensitized Solar Cells Using Vital Reaction of Anthocyanin**
°Koudai Kukita¹, Shoji Furukawa¹
¹Graduate School of Computer Science and Systems Engineering, Kyushu Institute of Technology
- <PII-14> Prism and grating coupling surface plasmon excitations and emission lights in organic dye films**
°Keizo Kato^{1,2}, Masayuki Sakai¹, Yasuo Ohdaira^{1,2}, Akira Baba², Kazunari Shinbo^{1,2}, Futao Kaneko^{1,2}
¹Graduate School of Science and Technology, Niigata University, Niigata, Japan
²Center for Transdisciplinary Research, Niigata University, Niigata, Japan
- <PII-15> Amplified spontaneous emission from photopumped thiophene-phenylene co-oligomers in polycrystalline state**
°Hiroyuki Mochizuki¹, Yoshizo Kawaguchi¹, Fumio Sasaki¹, Shu Hotta²
¹National Institute of Advanced Industrial Science and Technology (AIST)
²Kyoto Institute of Technology
- <PII-16> CS-AFM Images and Absorption Spectrum of J-Aggregates Behavior in Merocyanine Dyes LB Films**
°Hoon-Kyu Shin¹, Chang-Heon Yang²
¹National Center for Nanomaterials Technology, Pohang University of Science and Technology, Pohang, Korea
²Department of Nano Engineering, Dong-A University

Conference Program

- <PII-17> Peculiarities and the nature of luminescence of carbazole trimers for OLED**
Valeriy Yashchuk¹, °Vitaliy Kosach¹, Oleksandr Navozenko¹, Juozas V. Grazulevicius², Ausra Tomkeviciene², Jurate Simokaitiene², Pavlo Stakhira³, Vladyslav Cherpak³
¹Physics Department of Kyiv Taras Shevchenko National University, Kyiv, Ukraine
²Department of Organic Technology, Kaunas University of Technology, Kaunas, Lithuania
³Lviv Polytechnic National University, Lviv, Ukraine
- <PII-18> Flipping behavior of porphyrin derivative molecule on Au (111)**
°Hitoshi Suzuki^{1,2}, Hirofumi Yoshida^{1,2}, Hiroyuki Sakaue^{1,2}, Takayuki Takahagi¹, Shukichi Tanaka², Toshiya Kamikado², Akira Otomo²
¹Graduate School of Advanced Sciences of Matter, Hiroshima University, Japan
²National Institute of Information and Communications Technology
- <PII-19> The effects of alkaline and alkaline earth metal salts on the performance of a polymer actuator based on single-walled carbon nanotube-ionic liquid gel**
°Naohiro Terasawa¹, Ichiroh Takeuchi¹, Ken Mukai¹, Kinji Asaka¹
¹National Institute of Advanced Industrial Science and Technology (AIST), Ikeda, Osaka, Japan
- <PII-20> Recombination zone in organic light emitting diodes with emitting layer of diphenylanthracene-derivative host**
Chong Li¹, Wei Huang¹, °Taiju Tsuboi²
¹Institute of Advanced Materials, Nanjing University of Posts and Telecommunications, Nanjing, China
²Faculty of Engineering, Kyoto Sangyo University
- <PII-21> Direct patterning of Au electrodes on fullerene thin film by softlithography technique for fabricating top-contact organic transistors**
°Yusuke Ura¹, Eiji Itoh¹
¹Department of Electrical and Electronic Engineering, Shinshu University, Nagano, Japan
- <PII-22> Organic Electroluminescent Devices Based on ZnO Electrodes**
°Claire Heck¹, Keigou Maejima², Hajime Shibata², Shigeru Niki², Nobutaka Tanigaki¹
¹National Institute of Advanced Industrial Science and Technology, AIST, Ikeda, Osaka, Japan
²National Institute of Advanced Industrial Science and Technology, AIST, Tsukuba, Ibaraki, Japan
- <PII-23> Solution-processed Low-voltage Organic Thin-film Transistors with a Self-assembled Monolayer as a Gate Insulator**
°Yusuke Tamaura^{1,2}, Noboru Ohashi^{1,3}, Masayuki Chikamatsu¹, Yasuo Norikane¹, Reiko Azumi¹, Kiyoshi Yase^{1,4}, Masafumi Tamura²
¹Photonics Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)
²Tokyo University of Science, Graduate School of Science and Engineering
³The Research Center for Photovoltaics, AIST
⁴Nanosystem Research Institute, AIST
- <PII-24>* Memory effects in metal-insulator-semiconductor structure using a charge-storage polymer**
°Toan Thanh DAO^{1,4}, Satoru Yajima¹, Heisuke Sakai¹, Toshinori Matsushima¹, Motonobu Murakami², Kei Ohkubo², Shunichi Fukuzumi^{2,3}, Hideyuki Murata¹
¹School of Materials Science, Japan Advanced Institute of Science and Technology
²Department of Material and Life Science, Graduate School of Engineering, Osaka University, Suita, Osaka 565-0871, Japan
³Department of Bioinspired Science, Ewha Womans University, Seoul 120-750, South Korea
⁴Faculty of Electrical and Electronic Engineering, University of Transport and Communications, Hanoi, Vietnam
- <PII-25> Chemically cross-linked polypyrrole for suppressing the electrochemical creep**
°Katuyoshi Hamai¹, Kazuo Tominaga¹, Bhavana Gupta², Yuuki Kudoh¹, Wataru Takashima³, Rajiv Prakash², Keiichi Kaneto¹
¹Graduate School of LSSE, Kyushu Institute of Technology, Japan
²School of Materials Science and Technology, Institute of Technology, Banaras Hindu University, Varanasi-221005, India
³Research Center for Advanced Eco-fitting Technology, Kyushu Institute of Technology, Japan

Conference Program

- <PII-26>* n-type Transport Characteristics in Cyano-substituted Distyrylthiophene Derivatives**
°Daisuke Adachi¹, Kouji Kuramoto¹, Shuichi Nagamatsu¹, Tetsuji Moriguchi¹, Wataru Takashima¹, Tatsuo Okauchi¹, Katsuhiko Mizoguchi¹, Shuzi Hayase¹, Keiichi Kaneto¹
¹Grad. School of LSSE, Kyushu Institute of Technology, Fukuoka, Japan
- <PII-27> Synthesis and characteristics of low-molecule semiconductors consisted of thienothiophene derivatives**
°Kazuhiro Takamiya¹, Shinya Oku¹, Shuhei Ishikawa¹, Shuichi Nagamatsu², Wataru Takashima³, Keiichi Kaneto¹
¹Graduate School of LSSE, Kyushu Institute of Technology
²Department of CSE, Kyushu Institute of Technology Iizuka
³Center Adv. Eco fitting Tech, Kyushu Institute of Technology
- <PII-28>* Organic Photodetectors with Triplet Materials Doped in Poly(alkylfluorene) Derivative**
°Akihiro Katsura¹, Tatsunari Hamasaki¹, Hirotake Kajii¹, Yutaka Ohmori¹
¹Center for Advanced Science and Innovation, Osaka University, Osaka, Japan
- <PII-29>* Design of Multimode Interference EO Polymer Switching Device**
°Feng Yu¹, Kazuhiro Yamamoto¹, Xianqing Piao¹, Shiyoshi Yokoyama¹
¹Institute for Materials Chemistry and Engineering, Kyushu University, Kasuga 816-8580, Japan
- <PII-30>* Availability of thermovoltaic measurement for analysis of carrier density in organic semiconductors**
°Kouji Suemori¹, Ryuuto Yamamoto¹, Toshihide Kamata¹
¹Photonics Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)
- <PII-31>* Interfacial ion conductivity between gels dispersed amino acid molecules, and an effect of hydrogenated amorphous silicon on a rectification property of laminated gel films**
Yutaka Tsujiuchi¹, Yuuki Hiramitsu¹, °Takuya Takahashi¹, Takaaki Ichikawa¹, Hiroshi Masumoto², Takashi Goto³
¹Department of Material Science and Engineering, Akita University, Akita, Japan
²Center for Interdisciplinary Research, Tohoku University, Sendai 980-8578, Japan
³Institute for Materials Research, Tohoku University, 2-1-1 Katahira, Aoba, Sendai, 980-8577 Japan
- <PII-32> In-plane Orientational Control of Pentacene Crystals On Various Textured Substrates**
°Naoki Nakayama¹, Masatoshi Sakai¹, Kazuhiro Kudo¹, Masakazu Nakamura¹
¹Department of Electrical and Electronic Engineering, Chiba University, Chiba, JAPAN
- <PII-33>* Deposition Area Control of Organic Thin Film Fabricated by Electrospray Deposition Technique**
°Hirotaka Asaki¹, Takeshi Fukuda¹, Takashi Asano¹, Kenji Takagi¹, Zentaro Honda¹, Norihiko Kamata¹, Wei Wei², Sheng Wang², Kiwamu Kase², Jungmyong Ju², Yutaka Yamagata²
¹The Department of Functional Materials, University of Saitama, Saitama, Japan
²RIKEN
- <PII-34>* Charge accumulation mechanisms at organic hetero interfaces: the effects of interface charges and orientation polarization**
°Yukimasa Miyazaki¹, Yutaka Noguchi^{1,2}, Yasuo Nakayama², Wolfgang Brueetting³, Hisao Ishii^{1,2}
¹Graduate School of Advanced Integration Science, Chiba University, Chiba, Japan
²Center for Frontier Science, Chiba University, Chiba, Japan
³Institute of Physics, University of Augsburg, Augsburg, Germany
- <PII-35> Microscopic Charge Modulated Reflectance Spectroscopy and Optical Second Harmonic Generation Imaging for Studying Carrier and Electric-Field Distribution in Pentacene Field-Effect Transistors**
°Takaaki Manaka¹, Satoshi Kawashima¹, Yasuyuki Tanaka¹, Mitsumasa Iwamoto¹
¹Department of Physical Electronics, Tokyo Institute of Technology
- <PII-36> Density Functional Theory Study on the Interaction of Fullerene (C60) with Radicals**
Hiroto Tachikawa¹, °Tetsuji Iyama¹, Shigeaki Abe²
¹Division of Materials Chemistry, Graduate School of Engineering, Hokkaido University, JAPAN
²Department of Biomedical Materials and Engineering, Graduate School of Dental Medicine, Hokkaido University, JAPAN

Conference Program

- <PII-37> A green-emission band caused by UV irradiation in sealed polyfluorene thin films**
°Masanori Nakagawa¹, Takashi Kobayashi^{1,2}, Takashi Nagase^{1,2}, Hiroyoshi Naito^{1,2}
¹Department of Physics and Electronics, Osaka Prefecture University, Osaka, Japan
²The Research Institute for Molecular Electronic Devices, Osaka Prefecture University
- <PII-38> Determination of the density of localized state in P3HT by impedance spectroscopy**
°Ryota Ikai¹, Hiroyuki Hase¹, Takashi Nagase^{1,2}, Takashi Kobayashi^{1,2}, Hiroyoshi Naito^{1,2,3}
¹Department of physics and Electronics, Osaka Prefecture University, Osaka, Japan
²The Research Institute for Molecular Electronic Devices, Osaka, Japan
³JST-CREST, Tokyo, Japan
- <PII-39> Isotope effect on vibronic coupling of (EDO-TTF-*d*₀)ⁿ (*n*=0, +1): A Theoretical Study**
°Ken Tokunaga¹
¹Department of General Education, Faculty of Engineering, Kogakuin University, Tokyo, Japan
- <PII-40> Optical properties of thermally evaporated PDI-8CN₂ thin films**
Liam J. Anderson¹, °Mohan, V. Jacob¹, M. Barra², F. V. Di Girolamo², A. Cassinese²
¹Electronic Materials Research Lab, School of Engineering and Physical Sciences, James Cook University, Townsville, Australia
²CNR-SPIN and Department of Physics Science, University of Naples Federico II, Naples, Italy
- <PII-41> Observation of Tunneling Currents through Self-Assembled Monolayer Using MIM Junction Fabricated from Conducting LB Films**
°Kengo Mochizuki¹, Hitoshi Ohnuki¹, Mitsuru Izumi¹, Keiichi Ikegami², Tatsuro Imakubo³
¹Tokyo University of Marine Science and Technology, Tokyo, Japan
²National Institute of Advanced Industrial Science and Technology
³Nagaoka University of Technology
- <PII-42> Preparation of a transparent electrode using a poly-carboxylic multi-walled carbon nanotube**
°Shigeaki Abe¹, Katsutoshi Nakayama², Daisuke Hayashi², Tsukasa Akasaka¹, Motohiro Uo¹, Fumio Watari¹, Tomoya Takada²
¹Department of Biomedical Materials and Engineering, Graduate School of Dental Medicine, Hokkaido University
²Department of Material Chemistry, Asahikawa National College of Technology
- <PII-43>* Vapor-Deposition Polymerization of Cross-linked Fluoropolymer Thin Film and Its Application for Anti-reflective Coating**
°Yasuhiro Hosoda¹, Kuniaki Tanaka¹, Hiroaki Usui¹
¹Department of Organic and Polymer Materials Chemistry, Tokyo University of Agriculture and Technology, Tokyo, Japan
- <PII-44>* Nonlinear Properties Improvement for FTC-based Chromophore by a Donor Modification Route**
°Xianqing Piao¹, Yuichi Mori¹, Feng Yu¹, Kazuhiro Yamamoto¹, Shiyoshi Yokoyama¹, Hideki Miki², Isao Aoki², Akira Otomo²
¹Institute for materials chemistry and engineering, Kyushu University
²Natl. Inst. of Infor Com. & Tech. 588-2 Iwaoka, Nishi-ku, Kobe 651-2492, Japan
- <PII-45>* Field Electron Emission from Carbon Nanotube/Aluminum Composites Improved by Cold Rolling**
°Yusuke Nakanishi¹, Hisao Yanagi¹, Kazuyuki Yokoyama², Akira Magario², Toru Noguchi²
¹Graduate School of Materials Science, Nara Institute of Science and Technology, Nara, Japan
²Research and Development Division, Nisshin Kogyo Co., Ltd., 840 Kokubu Ueda, Nagano 836-8505, Japan
- <PII-46>* Electrodeposition of p-CuSCN nanorod and its dye-sensitized photocathodic property**
°Lina Sun¹, Keigo Ichinose¹, Tomohiro Sekiya¹, Takashi Sugiura¹, Tsukasa Yoshida¹
¹Graduate School of Engineering, Gifu University, Gifu, Japan

Conference Program

<PII-47>* Synthesis and Photoinduced Alignment Behavior of Novel Fluorescent Molecules Containing Azobenzene Moiety

°Yuki Kambe¹, Kenji Kinashi², Masahiro Misaki¹, Yasuko Koshihara¹, Kenji Ishida¹, Yasukiyo Ueda¹

¹Department of Chemical Science and Engineering, Graduate School of Engineering, Kobe University, Kobe, Japan

²Graduate School of Macromolecular Science and Engineering, Kyoto Institute of Technology, Matsugasaki, Sakyo-ku, Kyoto, Japan

<PII-48> Probing Carrier Accumulation at Pentacene/P(VDF-TrFE) Interface by Electric-Field-Induced Second-Harmonic Generation

°Jun Li¹, Le Zhang¹, Wei Ou-Yang¹, Dai Taguchi¹, Takaaki Manaka¹, Mitsumasa Iwamoto¹

¹Department of Physical Electronics, Tokyo Institute of Technology, Japan

<PII-49> Effect of material properties of polyterpenol blocking layer on interfacial charging and discharging in double-layer pentacene-based metal-insulator-metal device

Kateryna Bazaka¹, °Mohan, V. Jacob¹, Dai Taguchi², Takaaki Manaka², Mitsumasa Iwamoto²

¹Electronic Materials Research Lab, School of Engineering, James Cook University, Townsville, Australia

²Department of Physical Electronics, Tokyo Institute of Technology, 2-12-1 O-okayama, Meguro-ku, Tokyo 152-8552, Japan

<PII-50> Carrier Propagation Dependence on Applied Potentials in OFET Investigated by Impedance Spectroscopy

°Jack Lin^{1,2}, Martin Weis², Dai Taguchi¹, Takaaki Manaka¹, Mitsumasa Iwamoto¹

¹Department of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan

²Institute of Physics, Slovak Academy of Sciences, Dubravska cesta 9, 845 11 Bratislava 45, Slovak Republic

18:30–20:00 **Banquet**

December 16 (Thursday)

08:30–09:00 **Registration**

09:00–15:15 **Session IV (Organic Devices)**

Session Chair: Mitsuyoshi Onoda (University of Hyogo)

09:00–09:40 **<SIV-1> Nanoscopic Materials for Organic Photovoltaic and Transistors Applications**

(Invited) °Antonio Facchetti¹

¹Northwestern University and Polyera Corporation

09:40–10:10 **<SIV-2> High-performance field-effect transistor devices with aromatic hydrocarbons and their novel physical properties**

(Invited) °Yoshihiro Kubozono¹

¹Reserach Laboratory for Surface Science & Research Center for New Functional Materials for Energy Production, Storage and Transport

10:10–10:25 **<SIV-3> Stacked Structure CMOS Circuits Using Silicone-Resin As Gate Dielectric Layers**

°Kazuhiro Kudo¹, Kodai Kikuchi¹, Hiroshi Yamauchi¹, Masatoshi Sakai¹, Masakazu Nakamura¹, Masaaki Iizuka²

¹Graduate School of Engineering, Chiba University, Chiba, Japan

²Faculty of Education, Chiba University, Chiba, Japan

10:25–10:45 **Coffee Break**

Session Chair: Keiichi Kaneto (Kyushu Institute of Technology)

10:45–11:15 **<SIV-4> Spin injection and transport in organic semiconductors**

(Invited) °Hirokazu Tada¹

¹Division of Materials Physics, Graduate School of Engineering Science, Osaka University

11:15–11:30 **<SIV-5> Direct observation of carrier behavior in ambipolar Poly9,9-di-*n*-octylfluorene-*alt*-benzothiadiazole light-emitting transistor by using second harmonic generation**

°Yuki Ohshima¹, Nobuaki Hirako¹, Hideki Kohn¹, Takaaki Manaka¹, Mitsumasa Iwamoto¹, Eunju Lim², Henning Sirringhaus²

¹Dpartment of Physical Electronics, Tokyo Institute of Technology, Tokyo, Japan

²Cavendish Laboratory, University of Cambridge, Cambridge, UK

Conference Program

- 11:30–11:45 <SIV-6> **Determination of Lifetime of Double-Layer CuPc/C₆₀ Organic Solar Cells by Optical Electric-Field-Induced Second-Harmonic Generation Measurement**
°Dai Taguchi¹, Tatsunori Shino¹, Xiangyu Chen¹, Le Zhang¹, Jun Li¹, Martin Weis², Takaaki Manaka¹, Mitsumasa Iwamoto¹
¹Department of Physical Electronics, Tokyo Institute of Technology, Japan
²Institute of Physics, Slovak Academy of Sciences, Slovak Republic
- 11:45–13:15 **Lunch**
- Session Chair: Hiroyoshi Naito (Osaka Prefecture University)
- 13:15–13:30 <SIV-7> **Carrier Transport Characteristics in Solution-processed Small Molecular Organic Light Emitting Devices with a Mixed Single Layer**
°Zhaokui Wang¹, Yanhui Lou¹, Shigeki Naka¹, Hiroyuki Okada¹
¹Graduate School of Science and Technology, University of Toyama
- 13:30–13:45 <SIV-8> **Microwave characterisation of a novel, environmentally friendly, plasma polymerised, organic material**
Liam J. Anderson¹, °Mohan, V. Jacob¹
¹Electronic Materials Research Lab, School of Engineering and Physical Sciences, James Cook University, Townsville, Australia
- 13:45–14:00 <SIV-9> **Maxwell-Wagner type interfacial relaxation process in a double-layer device investigated by time and frequency domain approaches**
°Le Zhang¹, Dai Taguchi¹, Jun Li¹, Takaaki Manaka¹, Mitsumasa Iwamoto¹
¹Tokyo Institute of Technology, Tokyo, Japan
- 14:00–14:15 <SIV-10> **Origin of time-variation of drain current for Organic Field Effect Transistors with polymer gate dielectric layer**
°Kouji Suemori¹, Misuzu Taniguchi¹, Sei Uemura¹, Manabu Yoshida¹, Satoshi Hoshino¹, Noriyuki Takada¹, Takehito Kodzasa¹, Toshihide Kamata¹
¹Photonics Research Institute, National Institute of Advanced Industrial Science and Technology
- 14:15–14:30 <SIV-11> **Organic thin-film transistor fabrication by stamping with a poly(dimethylsiloxane) plate**
°Reiko Azumi¹, Yoshinori Horii¹, Masayuki Chikamatsu¹, Mitsuhiro Ikawa¹, Ming Lu¹, Kiyoshi Yase²
¹Photonics Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)
²Nanosystem Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)
- 14:30–14:45 <SIV-12> **Influence of new fullerene derivatives with fluorocarbon substituent on performance of polymer solar cells**
°Ichiko Yamada¹, Manoj Pandey¹, Yasuhiko Hayashi¹, Norio Shibata¹, Takeshi Toru²
¹Department of Frontier Materials, Nagoya Institute of Technology, Nagoya, Japan
²Department of Research, Nagoya Industrial Science Research Institute
- 14:45–15:00 <SIV-13> **Synapse functions of organic device using conjugated conducting polymer**
°Masaharu Fujii¹, Yuka Machiya¹, Toshiyuki Sakai¹, Haruo Ihori¹
¹Graduate School of Science and Engineering, Ehime University, Matsuyama, Japan
- 15:00–15:15 **Concluding Remarks**
Award Presentation
Keiichi Kaneto (Kyushu Institute of Technology)