

*8th International Symposium on
Organic Molecular Electronics
(ISOME2014)*



Book of Abstracts

May 15 - 16, 2014

*Tokyo University of Agriculture and Technology
Tokyo, Japan*

*8th International Symposium on
Organic Molecular Electronics
(ISOME2014)*

*May 15 - 16, 2014
Tokyo University of Agriculture and Technology
Tokyo, Japan*

*Technical Committee of Organic Molecular Electronics,
Electronics Society of the Institute of Electronics, Information,
and Communication Engineers*

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Organized by:

The Technical Committee of Organic Molecular Electronics, Electronics Society of the Institute of Electronics, Information and Communications Engineers (IEICE)

Supported by:

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In cooperation with:

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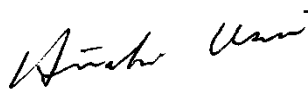
Preface

Organic Electronics: Innovation toward Human- and Environmental Friendly Technology

On behalf of the organizing committee, I would like to extend a cordial welcome to the 8th International Symposium on Organic Molecular Electronics (ISOME2018) held in Tokyo from May 15 to 16, 2014. The ISOME is a biannual symposium organized by the Electronics Society of Institute of Electronics, Information and Communication Engineers (IEICE). Ever since its inauguration in the year of 2000, this symposium has been the most important international conference of IEICE in the field of organic electronics, and has formed landmarks along the development of academic and technological progress in this field. Although the size of symposium is moderate, the active discussions among the leading scientists from diverse background nourish innovative and interdisciplinary concepts that can lead to breakthrough inaccessible by the conventional technology. It is our firm belief that the role of organic electronics is not simply a cheap substitute for conventional inorganic semiconductors but to bring a new paradigm of electronics that can bring human and environmental friendly technology for the welfare of future society. We hope that the ISOME 2014 provides fruitful opportunity, exciting experience and promising prospect for all the participants involved in this field. In this 8th ISOME, we are blessed with a significant increase in the number of papers, which proves by itself the bright future of organic electronics.

Special thanks are to the Electronics Society of IEICE, the international exchange program of National Institute of Information and Communications Technology (NICT), Izumi Science and Technology Foundation, and the Division of Molecular Electronics and Bioelectronics of Japan Society of Applied Physics, that made this symposium possible through invaluable financial support. The organizing committee expresses sincere thanks to all the invited speakers who are presenting cutting-edge research results to lead the community of organic electronics. Last but not the least; we are grateful to all the participants who we owe the success of this symposium.

May 15, 2014



Hiroaki Usui
General Chair,
Organizing Committee of ISOME 2014
Department of Organic and Polymer Materials Chemistry,
Tokyo University of Agriculture and Technology

EIC 電子情報通信学会
The Institute of Electronics, Information and Communication Engineers (IEICE)

NICT National Institute of
Information and
Communications
Technology

ISTF

ZUMI SCIENCE AND TECHNOLOGY FOUNDATION

JSAP
M&BE
Since 1985
Japanese Society for
Microelectronics and Bioelectronics

General Information

Scope and Topics

The symposium covers various aspects of organic materials that are related to electronic applications, including insulators, semiconductors, conductors, optic materials, magnetic materials, and biomaterials. Their applications extend to such fields as transistors, memories, displays, photovoltaics, optical devices, energy devices, sensors, actuators, and bioelectronics. The topics related to basic physics and chemistry, material development, process technologies, devices and applications are covered in this symposium. The ISOME 2014 aims to bring up new buds on the research of these issues.

Date : May 15 and 16, 2014

Venue : Tokyo University of Agriculture and Technology
2-24-16 Naka-cho, Koganei, Tokyo 184-8588, Japan
http://www.tuat.ac.jp/en/basic_information/access/index.html

Abstract Submission

Please submit an abstract (A4 size, either 1 or 2 pages) together with the subscription form by e-mail to the program committee of ISOME 2014 (isome@cc.tuat.ac.jp).

Registration

Pre-registration (on or before April 16) : JPY 25,000 for a regular or JPY 10,000 for a student
After April 17 : JPY 30,000 for a regular or JPY 15,000 for a student
(including banquet fee of JPY 3,000)

Submission to IEICE Transactions on Electronics

A special issue of IEICE Transactions on Electronics will be published in connection with ISOME 2014. The participants are strongly encouraged to submit their manuscripts either as a full paper or a brief paper of the journal. The papers will undergo the regular process of peer reviewing.

Deadline for submission	May 30, 2014
Web site for submission	https://review.ieice.org/regist_e.aspx
Journal / Section	[Special OM] Recent Progress in Organic Molecular Electronics
Guideline for authors	http://www.ieice.org/eng/shiori/mokuji_es.html

A membership of IEICE is required to make the submission.

IEICE Home page	http://www.ieice.org/eng/index.html
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Contact

ISOME 2014 Web site	http://www.ieice.or.jp/es/ome/ISOME/
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If you have any queries, please feel free to contact the secretariat general at isome@cc.tuat.ac.jp

Presentation Information

Oral Presentations

The conference room is located on the 3rd floor of "Ellipse" building.

Presentation time is 40 min for plenary lectures, 25 min for invited talks, and 15 min for contributed talks, each including the time for discussion. Please bring your own computer with D-sub 15 pin standard connection for projector.

Poster Presentations

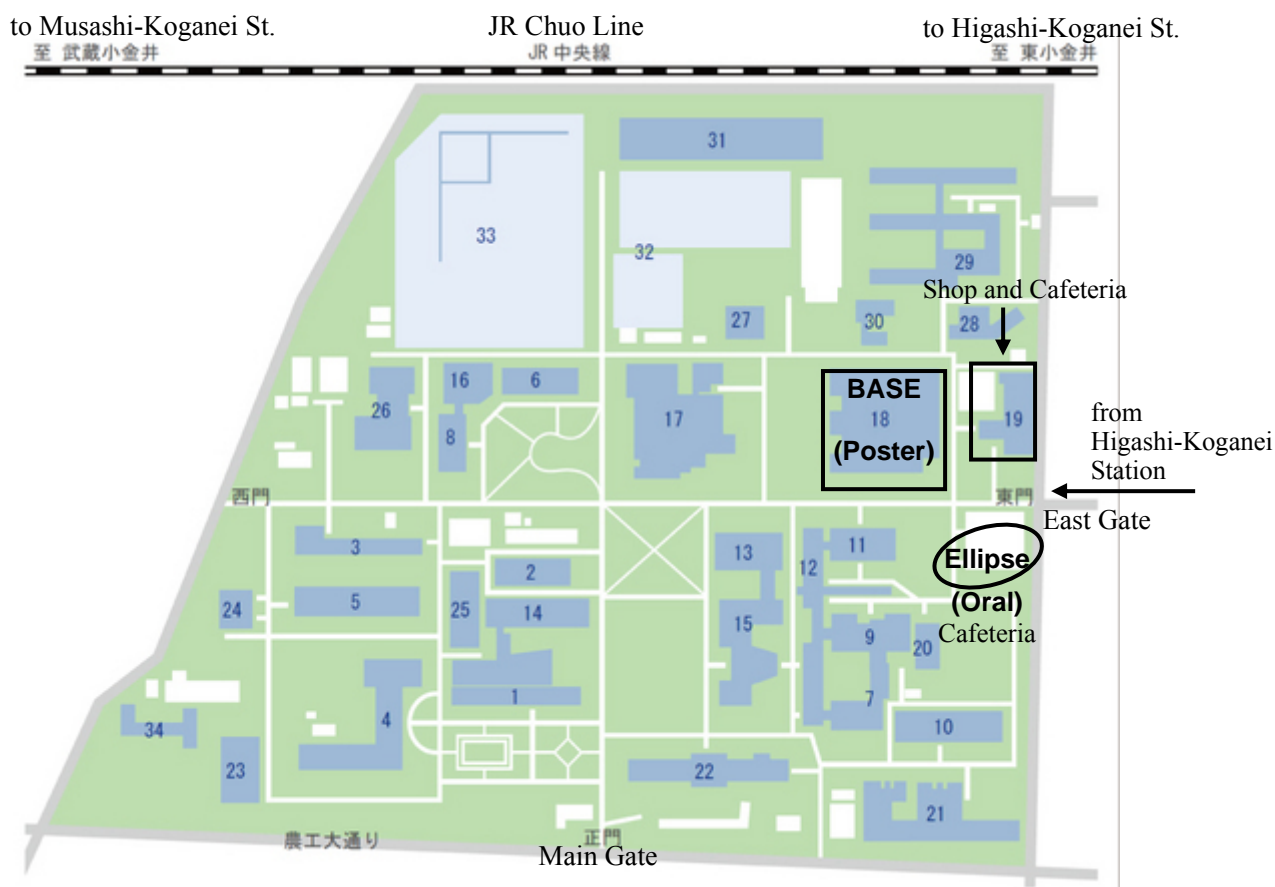
The poster session is held on the 1st floor of "BASE" building from 17:00 to 18:40, May 15. The poster boards will be ready by noon of 15th. Please mount your posters during the breaks, and remove your posters as soon as the poster session is over. The size of one board is 88 cm x 119 cm, which is just for the size of "A0" paper.

Conference Site

Oral Presentation: 3rd Floor of "Ellipse" building

Poster Presentation: 1st Floor of "BASE" building

A cafeteria is located on the 1st floor of Ellipse building. Another student cafeteria and a shop are available in a building opposite to the Ellipse.



ISOME 2014 Program

May 15 (Thu.)

Opening Address (9:30~9:35)

Hiroaki Usui
Tokyo University of Agriculture and Technology

Plenary Lecture 1 (9:35~10:15)

Chairperson: Hiroaki Usui (Tokyo University of Agriculture and Technology)

PL-1 09:35 (invited)

Photonics polymer researches based on strategic innovation project

Seizo Miyata
The University of Electro-Communications, Japan

SESSION 1 (10:15~11:20) == OLED & LCD ==

Chairpersons: Shigeki Naka (Toyama University)
Tatsuo Mori (Aichi Institute of Technology)

I-01 10:15 (invited)

The study of n-type doping and stamping transfer processes of electron transport layer for organic light emitting diodes

Fuh-Shyang Juang, Apisit Chittawanij, Lin-An Hong, Yu-Sheng Tsai, Gua-Kai Huang
Institute of Electro-Optical and Materials Science, National Formosa University, Taiwan

I-02 10:40 (invited)

Polymer network morphology and electro-optical performance in reverse mode liquid crystals : the influence of liquid crystal materials

R. Yamaguchi, K. Goto, S. Mizukuchi
Faculty of Engineering Science, Akita University, Japan

O1-1 11:05

Influence of polymer gate insulators on p-channel and n-channel formation of fluorene-type polymer light-emitting transistors

Hirotake Kajii, Masato Ise, Hitoshi Tanaka, Takahiro Ohtomo, Yutaka Ohmori
Graduate School of Engineering, Osaka University, Japan

SESSION 2 (11:35~12:30) == Organic Transistors ==

Chairpersons: Toshiaki Hayashi (NTT)
Masatoshi Sakai (Chiba University)

I-03 11:35 (invited)

Exploring the transport properties of organic semiconductors in single-crystal transistors and interfaces

Alberto Morpurgo
University of Geneva, Switzerland

O2-1 12:00

Analyzing band-like transport in solution-processed organic single-crystal transistors based on the interface approximation

Joung-Min Cho, Toshiki Higashino, Takehiko Mori
Department of Organic and Polymeric Materials, Tokyo Institute of Technology, Japan

O2-2 12:15

Fully printed organic thin-film transistors on micron-thick parylene substrates

Kenjiro Fukuda, Yasunori Takeda, Daisuke Kumaki, Shizuo Tokito
Research Center for Organic Electronics, Yamagata University, Japan

Plenary Lecture 2 (13:20~14:00)

Chairperson: Keizo Kato (Niigata University)

PL-2 13:20 (invited)

Electronanopatterned conducting polymers and hybrid

Rigoberto C. Advincula

Department of Macromolecular Science and Engineering Materials, Case Western Reserve University, U. S. A.

SESSION 3 (14:00~15:05) == Organic Energy Devices ==

Chairpersons: Takaaki Manaka (Tokyo Institute of Technology)

Akihiro Kohno (NTT)

I-04 14:00 (invited)

Design and development of organic electronics materials based on fine-tuning of the electronic structure

Atsushi Wakamiya^{1,2}, Hidetaka Nishimura¹, Hiroyuki Shimogawa¹, Motoi Satou¹, Masaru Endo¹, Tatsuya Fukushima¹, Yasujiro Murata¹, Hironori Kaji¹

¹*Institute for Chemical Research, Kyoto University, Japan*

²*JST-PRESTO*

I-05 14:25 (invited)

Novel organic thermoelectric materials containing CNT

Naoki Toshima, Keisuke Oshima, Yosuke Ohkawachi, Shoko Ichikawa, and Akio Yoshida

Department of Applied Chemistry and Advanced Materials Institute, Tokyo University of Science Yamaguchi, Japan

O3-1 14:50

The effect of solvent additives on morphology and dynamics of polymer based organic bulk heterojunction solar cells studied by solid-state NMR

Hironori Ogata^{1,2}, Sayo Ishikawa², Yuta Iida¹

¹*Grad. School of Science and Engineering, Hosei University, Japan*

²*Faculty of Bioscience and Applied Chemistry, Hosei University, Japan*

O3-2 15:05

A broad survey of organic-based materials as a novel class of thermoelectric materials

Masakazu Nakamura, Mitsuhiro Ito, Ryo Abe, Hiroataka Kojima, Ryosuke Matsubara

Graduate School of Materials Science, Nara Institute of Science and Technology, Japan

SESSION 4 (15:35~16:55) == Organic Sensors ==

Chairpersons: Akira Baba (Niigata University)

Hiroaki Usui (Tokyo University of Agriculture and Technology)

I-06 15:35 (invited)

An investigation of red blood cell (RBC) grouping by surface plasmon resonance (SPR) technique

Toemsak Srikihrin^{1,2}, Chinawut Pipatpanukul¹, Krisda Sudprasert¹, Patjaree Peungthum¹, Apirom Vongsakulyanon³, Pimpan Kitpoka³, Mongkol Kunakorn³, Boonsong Sutapun⁴, Ratthasart Amarit⁵, Armote Somboonkaew⁵

¹*Materials Science and Engineering Programme and ²Physics Department, Faculty of Science, Mahidol University, Thailand*

³*Department of Pathology, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Thailand*

⁴*School of Electronic Engineering and School of Telecommunications Engineering, Suranaree University of Technology, Thailand*

⁵*Photonics Technology Laboratory, National Electronics and Computer Technology Center, Thailand*

I-07 16:00 (invited)

Gas sensors based on organic field-effect transistors: selectivity by using a variety of organic materials

Tomohiko Mori, Yoshihiro Kikuzawa, Koji Noda

Toyota Central R&D Labs., Inc., Japan

O4-1 16:25

Evaluation of a sterilization system using active oxygen species, employing the quartz crystal microbalance (QCM) method

Kiyoshi Yoshino^{1,3}, Hiroyuki Matsumoto^{1,3}, Tatsuyuki Iwasaki¹, Shinobu Kinoshita¹, Kazutoshi Noda², Kei Oya³, Satoru Iwamori³

¹ *Research and Development Department, Iwasaki Electric Co., Ltd., Japan*

² *Research Institute for Environmental Management Technology, National Institute of Advanced Science and Technology, Japan*

³ *Faculty of Engineering, Tokai University, Japan*

O4-2 16:40

Focused surface acoustic wave devices for pressure sensing at inkjet nozzle

Thu-Hang Bui, Trinh Chu Duc

University of Engineering and Technology, Vietnam National University, Vietnam

POSTER SESSION (17:00~18:40)

(BASE building 1F)

May 16 (Fri.)

SESSION 5 (9:00~10:45) == Organic Solar Cells ==

Chairpersons: Tatsunosuke Matsui (Mie University)

Keizo Kato (Niigata University)

I-08 09:00 (invited)

Low trap DOS, charge injection and thermoelectricity in organic semiconductors

B. Batlogg, B. Blütle, R. Häusermann, T. Mathis, K. Mattenberger, K. Willa, T. Zimmerling

Laboratory for Solid State Physics, Switzerland

I-09 09:25 (invited)

Charge carrier dynamics in polymer solar cells

Hideo Ohkita^{1,2}, Jiamo Guo¹, Shunsuke Yamamoto¹, Satoshi Honda¹, Hiroaki Benten¹, Shinzaburo Ito¹

¹*Department of Polymer Chemistry, Graduate School of Engineering, Kyoto University, Japan*

²*Japan Science and Technology Agency, Japan*

I-10 09:50 (invited)

Nickel oxide electrode interlayer in CH₃NH₃PbI₃ perovskite/PCBM planar-heterojunction hybrid solar cells

Jun-Yuan Jeng, Kuo-Cheng Chen, Tsung-Yu Chiang, Tzung-Fang Guo, Peter Chen

Department of Photonics, Advanced Optoelectronic Technology Center, Research Center for Energy Technology and Strategy, National Cheng Kung University, Taiwan

O5-1 10:15

Efficiency enhancement of organic solar cell by insertion of third layer

Takuo Murakami, Masaki Tanaka, Ken Ishikawa

Dept. of Organic and Polymeric Materials, Tokyo Institute of Technology, Japan

O5-2 10:30

Bulk heterojunction organic solar cells based on ternary blend active layer of two donors PTB7, P3HT and acceptor PC₆₁BM

Yurina Ohori¹, Toshihiro Hoashi¹, Yuichiro Yanagi¹, Takanori Okukawa¹, Masaya Ohzeki¹, Tatsuki Yanagidate¹, Shunjiro Fujii², Hiromichi Kataura², Yasushiro Nishioka¹

¹*Department of Precision Machinery, College of Science and Technology, Nihon University, Japan*

²*Nanosystem Research Institute, National Institute of Advanced Industrial Science and Technology, Japan*

SESSION 6 (11:00~12:30) == Biotechnologies ==

Chairpersons: Naoki Matsuda (AIST)

Hidenobu Siroisi (Tokyo National College of Technology)

I-11 11:00 (invited)

Virus-based piezoelectric materials

Seung-Wuk Lee

Department of Bioengineering, University of California, U. S. A.

I-12 11:25 (invited)

Biointerface engineering on the basis of polarized bioceramics

Kimihiko Yamashita

Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, Japan

I-13 11:50 (invited)

Construction of a flow cell-type biofuel cell to produce useful compounds as well as electric energy

Riku Sakuta¹, Kouta Takeda¹, Kiyohiko Igarashi^{2,3}, Masahiro Samejima², Nobuhumi Nakamura^{1,3}, Hiroyuki Ohno¹

¹*Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology, Japan*

²*Department of Biomaterial Sciences, The University of Tokyo, Japan*

³*ALCA, Japan Science and Technology Agency, Japan*

O6-1 12:15

Direct electron transfer reaction of cytochrome c immobilized on ITO electrode modified with 10-carboxyphosphonic acid

Naoki Matsuda, Hirohisa Okabe

Measurement Solution Research Center, AIST, Japan

SESSION 7 (13:20~14:50) == Organic Materials ==

Chairpersons: Masakazu Nakamura (Nara Institute of Science & Technology)
Kazuya Tada (University of Hyogo)

I-14 13:20 (invited)

Dielectrics based on Supramolecular Rotators

Takayoshi Nakamura

Research Institute for Electronic Science, Hokkaido University, Japan

I-15 13:45 (invited)

Transport Density-of-States in Organic Field-Effect Transistors

Han Guo, Rui-Qi Png, Peter Ho

Department of Materials Science, National University of Singapore, Singapore

O7-1 14:10

On the resistance to injection dedoping of doped conducting polymers

D. Belaineh¹, R.Q. Png¹, V. Seshadri², M. Mathai², C.L. McGuinness², P.K.H. Ho¹

¹*Department of Physics, Blk S12, National University of Singapore, Singapore*

²*Plextronics, Inc., U. S. A.*

O7-2 14:25

Theoretical prediction of crystal structure of polycyclic aromatic organic semiconductors

Naoyuki Niitsu¹, Shigeaki Obata^{1,2}, Toshiaki Miura¹, Yukihiro Shimoi¹

¹*Nanosystem Research Institute, National Institute of Advanced Industrial Science and Technology, Japan*

²*Toyohashi University of Technology, Japan*

SESSION 8 (14:55~16:30) == Organic Electronic Devices ==

Chairpersons: Koichi Sakaguchi (Saga University)
Shinichiro Inoue (NICT)

I-16 14:55 (invited)

Materials and devices of high-performance organic transistors

Jun Takeya

Graduate School of Frontier Sciences, The University of Tokyo, Japan

I-17 15:20 (invited)

Large-area controllable nanowire printing, electronics and lithography

Sung-Yong Min¹, Tae-Sik Kim¹, Beom Joon Kim², Yong-Young Noh³, Hoichang Yang⁴, Jeong Ho Cho², Tae-Woo Lee¹

¹*Department of Materials Science and Engineering, Pohang University of Science and Technology, Korea*

²*SKKU Advanced Institute of Nanotechnology and Center for Human Interface Nano Technology, Sungkyunkwan University, Korea*

³*Department of Energy and Materials Engineering, Dongguk University, Korea*

⁴*Department of Advanced Fiber Engineering, Inha University, Korea*

O8-1 15:45

Evaluation of interface state density of organic transistors by TSC and quasi-static C-V measurements

K. Kudo, S. Kuniyoshi, H. Yamauchi, M. Sakai

Graduate School of Engineering, Chiba University, Japan

O8-2 16:00

Fully solution-processed Organic Flip-flop circuit with ink-jet printed electrodes

Yasunori Takeda^{1,2}, Yudai Yoshimura^{1,2}, Faiz Adi Ezarudin Bin Adib³, Kenjiro Fukuda^{1,2}, Daisuke Kumaki^{1,2}, Shizuo Tokito^{1,2}

¹*Graduate School of Science and Engineering, Yamagata University, Japan*

²*Research Center for Organic Electronics, Yamagata University, Japan*

³*Sato Holdings Corporation, LTD, Japan*

SESSION 9 (16:30~17:40) == Organic Materials ==

Chairpersons: Takeshi Fukuda (Saitama University)

Morihiro Saito (Tokyo University of Agriculture & Technology)

I-18 16:35 (invited)

Preparation and characterization of highly heat-resistant organic-inorganic hybrid materials made from polydimethylsiloxane

Yusuke Aoki¹, Ken Yoshioka²

¹*Graduate School of Engineering, Mie University, Japan*

²*KOA Corporation, Japan*

O9-1 16:55

Low melting point of silver nanowires: effect of surface-bound polyvinylpyrrolidone

Akihiro Tomioka, Akihiro Masuda, Kenji Ozasa, Shougo Maeda, Mizuki Hirayama, Hayami Tsukamoto, Masato Kawabata

Graduate School of Engineering, Osaka Electro-Communication University, Japan

O9-2 17:10

Direct probing of photo illumination effect in pentacene/poly-(vinylidene-trifluoroethylene) double-layer capacitor by electric-field-induced optical second-harmonic generation measurement

Zhe Min Shi, Dai Taguchi, Takaaki Manaka, Mitsumasa Iwamoto

Department of Physical Electronics, Tokyo Institute of Technology, Japan

O9-3 17:25

Thermal annealing effect on optical absorption spectra of poly(3-hexylthiophene):unmodified-C₆₀ composites

Kazuya Tada

Division of Electrical Engineering, University of Hyogo, Japan

Closing Remarks (17:40~17:45)

Keizo Kato

Niigata University

ISOME 2014 Poster Session

May 15 (Thu.) 17:00~18:40

P-01

Co-evaporant induced crystallization for phase-separation and crystallization of donor:acceptor blends in organic photovoltaic cells

Toshihiko Kaji^{1,2}, Masahiro Hiramoto¹

¹*Institute for Molecular Science, National Institutes of Natural Sciences, Japan*

²*JST-ALCA*

P-02

Synthesis and structural property in a film state of ladder-type polydiacetylene derivatives having a terephthalamide linker for organic semiconducting application

Yuuki Miyazaki, Kazuo Okamoto, Kenji Ogino

Graduate School of Bio-Applications and Systems Engineering, Tokyo University of Agriculture and Technology, Japan

P-03

Emission-angle-dependent photoluminescence of rubrene thin films on metal

Takashi Wakamatsu

Department of Electrical and Electronics System Engineering, Ibaraki National College of Technology, Japan

P-04

Morphology and conductivity of PEDOT/PSS films deposited on imidazole-modified surfaces

Ken Onishi, Ryota Kunikata, Kazuhiko Yamada, Shin-ichiro Nakajima

Japan Aviation Electronics Industry, Ltd., Japan

P-05

Evaluation of thermal stability in electro-optic polymers by thermally stimulated depolarization current Measurement

Kazuhiko Kinemura^{1,2}, Ryoma Ikemoto^{1,2}, Toshiki Yamada^{1,2}, Akira Otomo^{1,2}, Dai Taguchi¹, Takaaki Manaka¹, Mitsumasa Iwamoto¹

¹*Tokyo Institute of Technology, Japan*

²*National Institute of Information and Communications Technology, Japan*

P-06

Thermoluminescence in crystalline tris(2-phenylpyridine) iridium

Noriyuki Takada

Research Institute for Innovation in Sustainable Chemistry, National Institute of Advanced Industrial Science and Technology, Japan

P-07

Newly developed high refractive index resins with TiO₂ nanofillers

Satoru Tomaru, Masayuki Michiguchi, Kazumi Yamauchi, Yutaka Murakoshi, Atsushi Yamauchi, Naomi Kawakami, Kunihiko Sasakura, Tohru Maruno

Advanced Products Business Headquarters NTT Advanced Technology Corporation, Japan

P-08

Fabrication of water-soluble molybdenum oxide thin film by electrospray deposition method for organic photovoltaic cell

Katsumi Suzuki, Takeshi Fukuda, Yingjie Liao, Norihiko Kamata, Zentaro Honda

Department of functional Materials Science, Saitama University, Japan

P-09

Characterization of hetero- or homostructures of C₁₆TAB

Atsumi Ozawa, Yoko Deguchi, Yurika Otsuka, Chisa Fuchizaki, Hajime Imai

Faculty of Science, Japan Women's University, Japan

P-10

Analysis of carrier behaviors in double layer organic devices by using displacement current measurement and optical EFISHG measurement

Taishi Noma, Dai Taguchi, Takaaki Manaka, Mitsumasa Iwamoto

Department of Physical Electronics, Tokyo Institute of Technology, Japan

P-11

Photoluminescence of π -conjugated polymer nanoparticles fabricated by novel visible laser processing of tiny solution droplets

*Masato Kawabata, Akihiro Tomioka, Shuji Arai, Tatsuya Tanimura
Graduate School of Engineering, Osaka Electro-Communication University, Japan*

P-12

Surface potential measurement of organic multi-layered thin films on electrodes by Kelvin probe force microscopy

*Nobuo Satoh^{1,2}, Shigetaka Katori^{2,3}, Kei Kobayashi², Hirofumi Yamada², Kazumi Matsushige²
¹Chiba Institute of Technology, Japan
²Kyoto University, Japan
³Tsuyama National College of Technology, Japan*

P-13

Analyzing lifetime of α -NPD/Alq3 organic light-emitting diode by using filtering technique

*Ryo Nakamoto, Dai Taguchi, Takaaki Manaka, Mitsumasa Iwamoto
Department of Physical Electronics, Tokyo Institute of Technology, Japan*

P-14

Orientation-controlled films of thiophene/phenylene co-oligomers

*Masashi Kouda, Takeshi Yamao, Shu Hotta
Department of Macromolecular Science and Engineering, Kyoto Institute of Technology, Japan*

P-15

Evaluation of PAH/PSS layer-by-layer deposited film using a quartz-crystal-microbalance and surface-plasmon-resonance hybrid sensor

*Keisuke Kawachi, Kazunari Shinbo, Yasuo Ohdaira, Akira Baba, Keizo Kato, Futao Kaneko
Department of Electrical and Electronic Engineering and Center for Transdisciplinary Research, Niigata University, Japan*

P-16

Efficiency enhancement of white hybrid organic light-emitting diodes using n-type doping in electron transport layer

*Apisit Chittawanij, Yu-Sheng Tsai, Lin-Ann Hong, Fuh-Shyang Juang, Gua-Kai Huang
Institute of Electro-Optical and Materials Science, National Formosa University, Taiwan*

P-17

Fabrication and characterization of uniaxially aligned perylene diimide nanowires

*Shinjiro Machida, Makoto Tanikatsu, Takeshi Yamao, Noriaki Ikeda
Department of Macromolecular Science and Engineering, Kyoto Institute of Technology, Japan*

P-18

Simple method to cast oriented thin-films of π -conjugated polymer

*Wataru Takashima¹, Shuichi Nagamatsu²
¹Research Center for Advanced Eco-fitting Technology, Kyushu Institute of Technology, Japan
²Department of Computer Science and Systems Engineerings, Kyushu Institute of Technology, Japan*

P-19

Nanosized-structural fabrication technique on Nafion membrane utilizing nanoimprint method

*Nobuya Hiroshiba, Wataru Yano, Ryuji Okumura, Takuya Kusumoto, Yo Ichikawa
Graduate School of Engineering, Nagoya Institute of Technology, Japan*

P-20

Molecular dynamics simulation of organic thin film growth

*Toshihiro Shimada¹, Takashi Yanase², Taro Nagahama¹
¹Division of Materials Chemistry and ²Frontier Chemistry Center Faculty of Engineering, Hokkaido University, Japan*

P-21

Dispersibility evaluation of graphene derivatives with alkyl chain groups

*Asami Ohtake, Seiko Uchino, Masanao Era, Koichi Sakaguchi
Department of Chemistry and Applied Chemistry, Faculty of Science and Engineering, Saga University, Japan*

P-22

The study on reaction mechanism of synthesizing hydrophilic graphene derivatives by solution plasma process

Seiko Uchino¹, Asami Ohtake¹, Noboru Takisawa¹, Tatsurou Nakashima², Naoki Matsuda², Masanao Era¹, Koichi Sakaguchi¹

¹Department of Chemistry and Applied Chemistry, Faculty of Science and Engineering, Saga University, Japan

²Measurement Solution Research Center, National Institute of Advanced Industrial Science and Technology, Japan

P-23

Novel charge transport models for evaluating limiting factors of the mobility in organic polycrystalline films

Ryosuke Matsubara, Shunsuke Nakamura, Hirotaka Kojima, Masakazu Nakamura

Graduate School of Materials Science, Nara Institute of Science and Technology, Japan

P-24

Synthesis and dispersibility evaluation of graphene derivatives with organic solvent affinity

Koichi Sakaguchi¹, Asami Ohtake¹, Seiko Uchino¹, Akinori Fujito¹, Noboru Takisawa¹, Kunio Akedo², Masanao Era¹

¹Department of Chemistry and Applied Chemistry, Faculty of Science and Engineering, Saga University, Japan

²Toyota Central Research and Development Laboratories, Inc., Japan

P-25

Synthesis of extended π -conjugated compounds fused with benzo[1,2-*b*:4,5-*b'*]difuran framework and their application to organic field-effect transistor

Yuta Yamagata, Koji Nakano

Department of Organic and Polymer Materials Chemistry, Tokyo University of Agriculture and Technology, Japan

P-26

Synthesis and preparation of nanomaterials composed of several TTF derivatives with hydrogen bonds

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Preparation of chromophore-doped polymers toward electro-optic materials

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Electrophoretic deposition of diamond nanoparticles

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Vapor deposition polymerization of polyimide with naphthalene unit

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Ionization-assisted deposition of Ni layer on the surface of polymer

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A spin-coated polymer layer tethered to ITO via a reactive SAM

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Electron-assisted vapor deposition polymerization of n-alkene

Keita Sato, Kuniaki Tanaka, Hiroaki Usui

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Formation of fine patterns for printed electronics by an advanced gravure offset/flexography printing

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Isomerization induced by electrical carrier injection into a photochromic diarylethene film

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Selective electrospray deposition method for step-edge vertical-channel organic transistor

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Patterning of organic films and electrodes for fabricating the polymer based organic transistors

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Improvement of on/off ratio in organic field-effect transistor having thin molybdenum trioxide layer

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Role of copper phthalocyanine and N-type semiconductor interface layers on power conversion efficiency of bulk heterojunction polymer solar cells

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Performance evaluation of PTB7:PC₇₁BM based organic solar cells by spray coating method using different organic solvents

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Oriented growth effect on C₈-BTBT crystalline thin film by thermal lamination with rubbing

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Performance characterization of organic thin film transistors with a photo-curable gate insulator

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Low voltage operation of OFET using orientation controlled tetracene thin film

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Improved light emission properties and operation lifetime of multi-layered organic light-emitting diodes using dyes extracted from spinach

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Solution-processed highly efficient blue phosphorescent organic light-emitting diodes utilizing small molecular carbazole derivative

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Color tuning of micro-cavity organic light-emitting diodes by using a color conversion layer

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Synthesis and two-photon-related properties of small dendritic chromophores derived from functionalized quinoxalinoids

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Effects of a Cs₂CO₃ cathode buffer layer on the performance of bulk heterojunction solar cells based on PTB7:PC₇₁BM

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Highly conductive DMSO-treated PEDOT:PSS electrodes deposited using a neutralized solution

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Polymer solar cells based on PTB7:PC₇₁BM fabricated by push coating

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Usefulness of transmission ellipsometric method for evaluation of electro-optic materials

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Enhanced photocurrent generation at Spiro-OMeTAD/AuNPs/TiO₂ interface with grating-coupled surface plasmon excitation

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Anomalous dispersion of nanosphere dispersed liquid crystals as tunable metamaterials

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Optical waveguides for chemical and biosensing

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Flexible L-Ascorbic acid fuel cell fabricated using MEMS techniques

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Glucose fuel cells on flexible polyimide film

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Fabrication of mesoporous TiO₂-based organometal trihalide Perovskite solar cells

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Study on transport behaviors of ions and solvent in solution electrolytes for electrochemical capacitors

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Enhancement of the thermoelectric properties of carbon nanotube composites by insertion of bio-nanodots at nanotube junction

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Electrochemical ammonia oxidation by carbon supported multilayered shell-core noble metal catalysts

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Effective nitrogen chemical species in oxygen reduction catalysts made from iron cobalt complexes with pyridyl ligands as precursors

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Improving the efficiency of inverted organic solar cells by modifying blocking layers

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Novel design of organic thermoelectric materials utilizing controlled structural transition: benzoporphyrin derivatives

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Real-time monitoring of chemical reaction in microdroplet with quantum dot and dye using fluorescence spectroscopy

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A portable biofuel cell utilizing agarose hydrogel containing glucose

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ABO blood typing by long-range surface plasmon resonance (LR-SPR) biosensor

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Real-time imaging of dynamic adsorption processes of cytochrome *c* on the SAM modified gold electrode by electrochemical high-speed atomic force microscopy

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Preparation of Au nano-particle dispersed water solution for surface-enhanced Raman scattering

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Electrophysiological detection using microwells sealed with lipid bilayers

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Amperometric biosensor based on multilayer containing glucose oxidase, carbon nanotube, plasma-polymerized film, and electron transfer mediator

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Amperometric biosensor with electronic type-controlled single-walled carbon nanotube

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Ambipolar organic thin-film transistors on a flexible substrate

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