

10th International Symposium on Organic Molecular Electronics (ISOME2018)



Information Book

May 31 – June 2, 2018

Sun Messe Tosu

Tosu, Saga, Japan

10th International Symposium on Organic Molecular Electronics (ISOME2018)

May 31 – June 2, 2018

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Tosu, Saga, Japan

Organized by

**Technical Committee on Organic Molecular Electronics, Electronics
Society of The Institute of Electronics, Information and Communication
Engineers (IEICE)**

Sponsored by

**Electronics Society of The Institute of Electronics, Information and
Communication Engineers (IEICE)
Tosu City, Saga Prefecture**

In cooperation with

**Division of Molecular Electronics and Bioelectronics, The Japan Society of
Applied Physics**



Preface

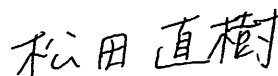
Thank you very much for your attendance to ISOME2018, and welcome to Tosu. This is the 10th in a series of the biennial conference that started in Nagoya Univ. in 2000, continued in Riken, Kyoto Univ., Saitama Univ., Univ. of Hyogo, Chiba Univ., NTT Musashino R&D Center, Tokyo University of Agriculture and Technology, Niigata Univ., and Sun Messe Tosu.

On behalf of the organizing committee, I would like to express our sincere thanks to three plenary lecturers and fifteen invited speakers, who are internationally distinguished researchers. ISOME has been the most important conference of IEICE in the field of organic electronic. In ISOME2018, to clear the current landmark and share the road map in the near future inside the attendees, many presentations in the field of flexible electronics, bioelectronics, and biotechnology are invited. Many presentations with relatively wide range in different fields would bring you unexpected idea and information which are expected to be effective and significant to your research. One of the remarkable advantages of ISOME is the moderate size which encourages us to start the discussion in the lunch time, coffee break, poster session, welcome reception or banquet.

We started planning ISOME2018 by our own way, so the main income is the attendance fee. Our initial mission was to ask the invited speakers if they will be able to join to ISOME2018 without economical support or not. It was great pleasure for us that many invited speakers offered us to pay the attendance fee by themselves. Finally 108 presentations have been accepted and about 130 attendees are registered. We are fully satisfied with this result, and would like to say thank you very much for your joining to ISOME2018.

I would like to express my sincere appreciation to all the committee members of ISOME2018 with enough cooperation and Tosu City due to the financial support. I should note here that the past ISOME conferences strongly contributed to the successful prosperity on ISOME2018. I would like to acknowledge to all the members in these conferences. I believe we have finished preparation of ISOME2018 and ready to welcome you. I would like to enjoy joining to this conference with all the attendees, too.

May 27, 2018



Naoki Matsuda
ISOME2018 Conference Chair
Senior Researcher, AIST

ISOME2018 Organizing Committee

Chair	Naoki Matsuda, AIST
Vice-Chair	Tatsuo Mori, Aichi Institute of Technology Yutaka Majima, Tokyo Institute of Technology
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Keizo Kato, Niigata University

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Yuji Kasashima, AIST

Taisei Motomura, AIST

Yuki Fujio, AIST

Wataru Iwasaki, AIST

Toshihiko Nagamura, National Institute of Technology, Kitakyushu College

General Information

Scope and Topics

The symposium covers various aspects of organic materials that are related to electronic, advanced device applications, including semiconductors, conductors, optic materials, and biomaterials. Their applications are recently expanding to transistors, memories, displays, photovoltaics, optical devices, energy devices, sensors, bioelectronics, biotechnologies and medical devices. Basic physics and chemistry, material development methods, process technologies are covered in this symposium.

Date and Venue

Date: May 31 – June 2, 2018

Venu: Sun Messe Tosu (1819 Hontosumachi, Tosu, Saga 841-0026, Japan)
<https://www.city.tosu.lg.jp/1677.htm>

Abstract Submission

Please submit an abstract together with the submission form by e-mail to the program committee of ISOME 2018 (info@ISOME2018.com) by **February 25, 2018**. The abstract template and the submission form can be downloaded from the ISOME 2018 website.

Registration

Pre-registration (on or before April 17) : JPY 25,000 for a regular or JPY 10,000 for a student

Registration on and after April 18 : JPY 30,000 for a regular or JPY 15,000 for a student

Banquet fee: 5,000 JPY [Registration form and related information are available on the OSME2018 website.]

Submission to IEICE Transactions on Electronics

The IEICE Transactions on Electronics announces a forthcoming special section on “Recent Progress in Organic Molecular Electronics and Biotechnology” to be published in February 2019. The participants are strongly encouraged to submit their manuscripts either as a full paper or a brief paper of the journal. The deadline for submission is **June 15, 2018**. The submitted papers undergo regular process of pure reviewing. Please consult the ISOME2018 website.

Information for Presentation

For Oral Presentation

- Plenary Speakers: 40 minutes (35 minutes for presentation and 5 minutes for discussion)
- Invited Speakers: 20 minutes (15 minutes for presentation and 5 minutes for discussion)
- Contributed Speakers: 15 minutes (10 minutes for presentation and 5 minutes for discussion)
- Contributed Speakers of Student Oral Session: 15 minutes (10 minutes for presentation and 5 minutes for discussion)

For Poster Presentation

- Poster board size is 900 mm (width) x 1200 mm (height). A0 size poster will be suitable.
- Pins will be provided at the poster area.
- The posters should be on display after finishing Session e on May 31.
- All the poster presentations are required to be present at their posters according the session schedule.
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Welcome Reception

The welcome Reception is held at “Izakaya Yamada” from 18:30-20:30 on May 30. All the participants are welcome to the Welcome Reception. The attendance fee is 1,000 Yen for.

Banquet

Symposium Banquet will be held from 18:30 to 20:30 on June 1st at Kihotsuru Shuzo (基峰鶴酒造). near JR Kiyama station. Please apply for a Pre-registration because the number of participants of the Banquet is limited. The participation application of the day may be impossible.

Contact

ISOME2018 website: <http://www.ieice.org/~ome/ISOME/Welcome.html>

ISOME2018 Secretariat: info@isome2018.com

ISOME2018 Schedule

	May 31 (Thursday)		June 1 (Friday)		June 2 (Saturday)
	Hall		Hall		Hall
Morning	<p>Registration (8:30-17:30)</p> <p>Opening Remarks (9:00)</p> <p>Plenary Lecture 1 (9:05-9:45) PL-1 (Invited) <i>T H Lee</i></p> <p>break</p> <p>Session 1 (10:00-12:00) I1-1(Invited) <i>T Matsushima</i> I1-2(Invited) <i>M Leyden</i> I1-3(Invited) <i>K Nakayama</i> I1-4(Invited) <i>S S Saavedra</i> I1-5(Invited) <i>T Kato</i> I1-6(Invited) <i>C M Hsu</i></p>		<p>Registration (8:30-17:30)</p> <p>Plenary Lecture 3 (9:00-9:40) PL-3 (Invited) <i>M Grunze</i></p> <p>break</p> <p>Student Oral session 1 (10:00-12:00) S1-1 <i>L Shang</i> S1-2 <i>B Wang</i> S1-3 <i>T Ayabe</i> S1-4 <i>M Toyohara</i></p> <p>break</p> <p>S1-5 <i>S Nishimura</i> S1-6 <i>Y Yamaquchi</i> S1-7 <i>Y Nakamura</i></p> <p>Lunch seminar for students (12:25-13:05)</p>		<p>Registration (8:30-11:00)</p> <p>Session 9 (9:00-10:30) O9-1 <i>K Tada</i> O9-2 <i>I M Alrougy</i> O9-3 <i>C Lertvachirapaiboon</i> O9-4 <i>S Shimada</i> O9-5 <i>S Ando</i> O9-6 <i>T Arimura</i></p> <p>break</p> <p>Session 10 (10:45-12:00) O10-1 <i>T Hayashi</i> O10-2 <i>V O Eze</i> O10-3 <i>T Kaji</i> O10-4 <i>H Sakai</i> O10-5 <i>T Yamada</i></p> <p>Closing Ceremony (12:00-12:05)</p>
Afternoon	<p>Plenary Lecture 2 (13:20-14:00) PL-2 (Invited) <i>S Tokito</i></p> <p>Session 2 (14:00-14:40) I2-1(Invited) <i>T Kamata</i> I2-2(Invited) <i>K Fukuda</i></p> <p>break</p> <p>Session 3 (15:00-17:15) O3-1 <i>M Futamata</i> O3-2 <i>T Itoh</i> O3-3 <i>K Ito</i> O3-4 <i>M Bertz</i></p> <p>break</p> <p>O3-5 <i>T Sato</i> O3-6 <i>T Terasako</i> O3-7 <i>S Ohmi</i> O3-8 <i>S Watanabe</i></p>	<p>Session 4 (15:00-17:15) O4-1 <i>H Kageyama</i> O4-2 <i>T Matsui</i> O4-3 <i>H Kajii</i> O4-4 <i>Y Jung</i></p> <p>break</p> <p>O4-5 <i>H Murata</i> O4-6 <i>S Matsuda</i> O4-7 <i>V Vohra</i> O4-8 <i>H Ishii</i></p>	<p>Session 5 (13:20-14:40) I5-1(Invited) <i>C C Wu</i> I5-2(Invited) <i>T Lippert</i> I5-3(Invited) <i>M Tanaka</i> I5-4(Invited) <i>S W Lee</i></p> <p>break</p> <p>Session 6 (15:00-16:00) I6-1(Invited) <i>T Ichiki</i> I6-2(Invited) <i>M Taniguchi</i> I6-3(Invited) <i>A Offenhäusser</i></p> <p>break</p> <p>Session 7 (16:15-17:30) O7-1 <i>Y Ueno</i> O7-2 <i>S Kumagai</i> O7-3 <i>A Oshima</i> O7-4 <i>T Yasukawa</i> O7-5 <i>W Minoshima</i></p>	<p>Session 8 (16:15-17:30) O8-1 <i>T Nakamura</i> O8-2 <i>H Usui</i> O8-3 <i>T Amemiya</i> O8-4 <i>J Kawakita</i> O8-5 <i>T Nagamura</i></p>	
Evening	<p>Poster Session (17:20-19:20)</p>		<p>Banquet (18:30- 20:30) Kihotsuru Shuzo nearby JR Kiyama station</p>		

ISOME2018 Program

May 31 (Thursday) Registration 8:30-17:30

Opening Remarks

9:00-9:05 Welcome Address

Conference Chair

Naoki Matsuda

AIST, Kyushu Center, Japan

Plenary Lecture 1

Chairperson: Prof. Keizo Kato (Niigata University)

9:05-9:45 PL-1 (Invited)

Functional high-yield molecular-scale electronic devices

Takhee Lee

Department of Physics and Astronomy, Seoul National University, Korea

9:45-10:00 coffee break

Session 1

Chairperson: Prof. Tatsuo Mori (Aichi Institute of Technology)

Prof. Hirotake Kajii (Osaka University)

10:00-10:20 I1-1 (Invited)

Efficient and stable laser oscillation from organic semiconductor films

T. Matsushima¹⁻³, A. S. D. Sandanayaka^{1,2}, F. Bencheikh^{1,2}, K. Yoshida¹, M. Inoue¹,

T. Fujihara⁴, K. Goushi¹⁻³, J.-C. Ribierre^{1,2}, C. Adachi¹⁻³

¹OPERA, Kyushu University, Japan

²JST, ERATO, Japan

³WPI-I2CNER, Kyushu University, Japan

⁴ISIT, Japan

10:20-10:40 I1-2 (Invited)

Organo-lead-halide perovskite for solar cells and light emitting applications by chemical vapor deposition

Matthew R. Leyden^{1,2}, Yabing Qi², Chihaya Adachi¹

¹ Center for Organic Photonics and Electronics Research (OPERA), Kyushu University, Japan

² Okinawa Institute of Science and Technology Graduate University, Japan

10:40-11:00 I1-3 (Invited)

Vertical carrier transport in organic thin film devices

Ken-ichi Nakayama

Graduate School of Engineering, Osaka University, Japan

11:00-11:20 I1-4 (Invited)

Relationships between structure and charge transfer kinetics at organic monolayer/oxide interfaces probed using waveguide spectroelectrochemistry – toward understanding and enhancing the efficiency of organic electronic devices

S Scott Saavedra

University of Arizona, USA

11:20-11:40 I1-5 (Invited)

Integrated synthesis of graphene nanoribbons toward high performance optoelectrical devices

Toshiaki Kato^{1,2}, Toshiro Kaneko¹

¹Department of Electronic Engineering, Tohoku University, Japan

²JST-PRESTO, Japan

11:40-12:00 I1-6 (Invited)

Flexible organic light-emitting diodes based on stacked and surface-modified transparent conducting oxides

Ching-Ming Hsu, Wen-Tuan Wu, Don-Han Tsai, and U-Jun Peng

Department of Opto-Electrical Engineering, Southern Taiwan University of Science and Technology, Taiwan

Plenary Lecture 2

Chairperson: Prof. Toshihiko Nagamura

(National Institute of Advanced Industrial Science and Technology

National Institute of Technology, Kitakyushu College)

13:20-14:00 PL-2 (Invited)

Flexible printed organic electronics technology and wireless IoT sensor applications

Shizuo Tokito

Research Center for Organic Electronics, Yamagata University, Japan

Session 2

Chairperson: Prof. Toshihiko Nagamura

(National Institute of Advanced Industrial Science and Technology

National Institute of Technology, Kitakyushu College)

14:00-14:20 I2-1 (Invited)

Flexible IoT sensor device fabrication using advanced low-damage manufacturing techniques

Toshihide Kamata

AIST, Japan

14:20-14:40 I2-2 (Invited)

Ultraflexible organic solar cells: approaches to high performance and stable operation

Kenjiro Fukuda^{1,2}, Hiroaki Jinno^{1,3}, Xiaomin Xu¹, Sungjun Park¹, and Takao Someya^{1,2,3}

¹ *RIKEN Center for Emergent Matter Science, RIKEN, Japan*

² *Thin-Film Device Laboratory, RIKEN, Japan*

³ *Electrical and Electronic Engineering and Information System, The University of Tokyo, Japan*

14:40-15:00 coffee break

Session 3

Chairperson: Prof. Masayuki Futamata (Saitama University)

Dr. Naoki Matsuda (AIST)

15:00-15:15 O3-1

Tip-unenhanced Raman scattering

Saki Nakae, Kazuhiro Miyashita, Masayuki Futamata

Graduate School of Science and Engineering, Saitama University, Japan

15:15-15:30 O3-2

High-performance bioelectrocatalysts by immobilization of enzyme onto carbon-coated mesoporous silica membrane

Tetsuji Itoh^{1,2}, Akira Yamaguchi³, Yasuto Hoshikawa⁴, Taka-aki Hanaoka¹, Takashi Kyotani⁴ and Galen D. Stucky²

¹*National Institute of Advanced Industrial Science Technology (AIST), Japan*

²*Department of Chemistry & Biochemistry, University of California, USA*

³*Institute of Quantum Beam Science, Ibaraki University, Japan*

⁴*Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan*

15:30-15:45 O3-3

A novel efficient antibacterial action of ABC semiconductors

Kengo Ito¹, Tohru Nishibe¹, Masakazu Kawahara¹, Seiichiro Tsujitsuka², and Kenji Tanaka²

¹*Ito Research Institute Co., Ltd., Japan*

²*Department of Biological and Environmental Chemistry, Kindai University, Japan*

15:45-16:00 O3-4

Observation and classification of microorganisms using multi-modal surface-enhanced Raman microscopy based on plasmonic sensors

Morten Bertz¹, Masahiro Yanagisawa¹, Masahiro Kunimoto¹, and Takayuki Homma^{1,2}

¹*Research Organization for Nano & Life Innovation, Waseda University, Japan*

²*Department of Applied Chemistry, Waseda University, Japan*

16:00-16:15 coffee break

Chairperson: Prof. Yutaka Majima (Tokyo Institute of Technology)

Prof. Toshihiko Kaji (Tokyo University of Agriculture and Technology)

16:15-16:30 O3-5

Spatially-defined electroless copper plating on microstructured PDMS surfaces

T. Sato¹, C. Urata¹, N. Singh¹, A. Manettas¹, Y. Matsuo² and A. Hozumi¹

¹National Institute of Advanced Industrial Science and Technology (AIST), Japan

²Research Institute for Electronic Science, Hokkaido University, Japan

16:30-16:45 O3-6

Structural and photoluminescence properties of ZnO nanorods grown by chemical bath deposition and formation of PEDOT:PSS/ZnO nanorods heterojunctions

Tomoaki Terasako¹, Shohei Obara¹ Masakazu Yagi², Junichi Nomoto³
and Tetsuya Yamamoto³

¹Graduate School of Science and Engineering, Ehime University, Japan

²National Institute of Technology, Kagawa College, Japan

³Materials Design Center, Research Institute, Kochi University of Technology, Japan

16:45-17:00 O3-7

AuGe source and drain formation for the scaling of bottom-contact type pentacene-based OFETs

Shun-ichiro Ohmi, Mizuha Hiroki, and Yasutaka Maeda

Electrical and Electronic Engineering, Tokyo Institute of technology, Japan

17:00-17:15 O3-8

Single crystallization of thienoacene-based semiconductors in gel capillaries

Satoshi Watanabe^{1,2}, Ryota Urata¹, and Masashi Kunitake^{1,2}

¹Department of Applied Chemistry and Biochemistry, Kumamoto University, Japan

²Coordination Asymmetry, Grant-in-Aid for Scientific Research on Innovative Areas, Japan

Session 4

Chairperson: Prof. Koichi Sakaguchi (Saga University)

Prof. Yoshiyuki Seike (Aichi Institute of Technology)

15:00-15:15 O4-1

Development of organic solar cells using MoO₃ / Mg cathode interlayers

Iwamichi Ishikawa, Akira Higa and Hiroshi Kageyama

Department of Electrical and Electronics Engineering, Faculty of Engineering, University of the Ryukyus, Japan

15:15-15:30 O4-2

Direct imaging of photonic nanojets generated from a self-assembled liquid crystal microdroplet utilizing laser-scanning confocal microscope

Tatsunosuke Matsui, Takeru Nihashi and Kazuya Tsukuda

Department of Electrical and Electronic Engineering, Graduate School of Engineering, Mie University, Japan

15:30-15:45 O4-3

Improved characteristics of top-gate-type organic light-emitting transistors based on Super Yellow emissive layers with various annealing temperatures

Hirotake Kajii, Takayuki Mashimo, and Masahiko Kondow

Graduate School of Engineering, Osaka University, Japan

15:45-16:00 O4-4

Fully R2R gravure printed TFT-array for developing a digital column chromatograph

Younsu Jung¹, Hyejin Park², Ashish Sapkota², Yutaka Majima¹, and Gyoujin Cho²

¹Laboratory for Materials and Structures, Tokyo Institute of Technology, Japan

²Department of Printed Electronics Engineering, Sunchon National University, Korea

16:00-16:15 coffee break

Chairperson: Prof. Makoto Karakawa (Kanazawa University)

Prof. Yusuke Aoki (Mie University)

16:15-16:30 O4-5

Degradation analysis of OLED by Fourier transform ion cyclotron resonance mass spectrometry imaging

Hideyuki Murata¹, Saki Shigematsu¹, Akio Miyazato², Keiko Miyabayashi³, Heisuke Sakai¹

¹School of Advanced Science and Technology, Japan Advanced Institute of Science and Technology, Japan

²Nanomaterials Technology Center, Japan Advanced Institute of Science and Technology, Japan

³Course of Chemical and Bioengineering, Graduate School of Integrated Science and Technology Shizuoka University, Japan

16:30-16:45 O4-6

Hole transport property of α -phenyl-4'-(diphenylamino)stilbene single crystal prepared based on solubility and supersolubility curves

Mitsuhiko Katagiri¹, Shofu Matsuda¹, Norio Nagayama^{1,2}, Minoru Umeda¹

¹Department of Materials Science and Technology, Nagaoka University of Technology, Japan

²Ricoh Company, Ltd., Japan

16:45-17:00 O4-7

Low-cost fabrication of polymer electronic devices employing the eco-friendly push-coating process

Varun Vohra¹, Shusei Inaba¹, Francesco Galeotti², Umberto Giovanella², and Chiara Botta²

¹Department of Engineering Science, University of Electro-Communications, Japan

²Institute for Macromolecular Science (ISMAC-CNR), Italy

17:00-17:15 O4-8

Impact of orientation polarization on electron injection in OLED studied by negative ion photoemission spectroscopy and displacement current measurement

T. Makino¹, H. Kinjo¹, Y. Tanaka^{1,2}, and H. Ishii^{1,2,3}

¹Graduate School of Advanced Integration Science, Chiba University, Japan

²Center for Frontier Science, Chiba University, Japan

³Molecular Chirality Research Center, Chiba University, Japan

Poster Session 17:20-19:20

June 1 (Friday)

Registration 8:30-17:30

Plenary Lecture 3

Chairperson: Prof. Tomohiro Hayashi (Tokyo Institute of Technology)

9:00-9:40 PL-3 (Invited)

Superhydrophobic surfaces in the environment and in biotechnology

Michael Grunze

*Department of Cellular Biophysics, Max-Planck-Institut für medizinische Forschung,
Germany*

9:40-10:00 coffee break

Student Oral Session 1

Chairperson: Dr. Dai Taguchi (Tokyo Institute of Technology)

10:00-10:15 S1-1

High-performance molecular imprinted sol-gel LSPR array for agriculture volatile organic components sensing

Liang Shang, Chuanjun Liu, Kenshi Hayashi

Department of Electronics, Graduate School of Information Science and Electrical Engineering, Kyushu University, Japan

10:15-10:30 S1-2

Contraction and re-expansion of viologen incorporated poly-L-lysine based hydrogel by redox control

Bo Wang, Hironobu Tahara, and Takamasa Sagara

Graduate School of Engineering, Nagasaki University, Japan

10:30-10:45 S1-3

Exploration of chemical micro-environment in Nafion using redox-active probes

Tatsuya Ayabe, Takamasa Sagara

*Department of Advanced Technology and Science for Sustainable Development,
Nagasaki University, Japan*

10:45-11:00 S1-4

Viologen-incorporated monolayer on an Au electrode: Effect of terminal positioning of electroactive site

Masaki Toyohara, Takamasa Sagara

Graduate School of Engineering, Nagasaki University, Japan

11:00-11:15 coffee break

11:15-11:30 S1-5

Photo-controllable cell adhesion on peptide-polymer hybrid films

*Shin-nosuke Nishimura¹, Yukiko Tak², Yusuke Morita², Koji Yamamoto²,
Nobuyuki Higashi¹ and Tomoyuki Koga¹*

¹Department of Molecular Chemistry and Biochemistry, Faculty of Science and Engineering, Doshisha University, Japan

²Department of Biomedical Engineering, Faculty of Life and Medical Sciences, Doshisha University, Japan

11:30-11:45 S1-6

Gap states of a polyethylene model oligomer observed by using high-sensitivity ultraviolet photoelectron spectroscopy

Y. Yamaguchi¹, K. Shimizu¹, A. Matsuzaki¹, D. Sano¹, Y. Tanaka² and H. Ishii^{1,2,3}

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

²Center of Frontier Science, Chiba University, Japan

³Molecular Chirality Research Center, Chiba University, Japan

11:45-12:00 S1-7

Biodegradable neural cell culture sheet made of poly(anhydride) thin film with micro trench structures

Yuki Nakamura and Satomitsu Imai

Department of Precision Machinery Engineering, Graduate School of Science and Technology, Nihon University, Japan

12:25-13:05 Lunch seminar for students

Student Oral Session 2

Chairperson: Prof. Masatoshi Sakai (Chiba University)

10:00-10:15 S2-1

Patterning of OLED glass substrate for improving light outcoupling efficiency

Savanna Lloyd¹, Tatsuya Tanigawa², and Hideyuki Murata¹

¹*School of Materials Science, Japan Advanced Institute of Science and Technology (JAIST), Japan*

²*IMRA America Inc., Japan*

10:15-10:30 S2-2

Application of gold powder made from gold leaf for conductive inks

Sayaka Yamashita, Heisuke Sakai and Hideyuki Murata

Graduate School of Advanced Science and Technology, JAIST, Japan

10:30-10:45 S2-3

Quinoidal fused oligosilole derivative single molecular single-electron transistor

Seung Joo Lee¹, Yoonsu Jung¹, Tomohiro Tsuda², Ryo Takano², Ryo Shintani³, Kyoko Nozaki², and Yutaka Majima¹

¹*Laboratory for Materials and Structures, Tokyo Institute of Technology, Japan*

²*Department of Chemistry and Biotechnology, The University of Tokyo, Japan*

³*Division of Chemistry, Department of Materials Engineering Science, Osaka University, Japan*

10:45-11:00 S2-4

Wide-range tuning and enhancement of organic long persistent luminescence using emitter dopants

Kazuya Jinnai^{1,2}, Ryota Kabe^{1,2}, and Chihaya Adachi^{1,2,3}

¹*Center for Organic Photonics and Electronics Research (OPERA), Kyushu University,*

Japan

²JST, ERATO, Adachi Molecular Exciton Engineering Project, c/o OPERA, Kyushu University, Japan

³International Institute for Carbon Neutral Energy Research (WPI-ICNER), Kyushu University, Japan

11:00-11:15 coffee break

11:15-11:30 S2-5

Novel TADF molecules using trioxoazatriangulene as an acceptor

Yuma Ishikawa¹, Youichi Tsuchiya^{1,2} and Chihaya Adachi^{1,2,3}

¹Center for Organic Photonics and Electronics Research (OPERA), Kyushu University, Japan

²Japan Science and Technology Agency (JST), ERATO, Adachi Molecular Exciton Engineering Project, Japan

³International Institute for Carbon Neutral Energy Research (WPI-I2CNER), Kyushu University, Japan

11:30-11:45 S2-6

Fabrication of the flexible dual-gate OFET based organic pressure sensor

Tatsuya Ishikawa, Heisuke Sakai, and Hideyuki Murata

Graduate School of Advanced Science and Technology, JAIST, Japan

11:45-12:00 S2-7

A degradable biopolymer as dielectric for low voltage solution-processed organic field effect transistors

Ogunleye Olamikunle Osinimu, Yohei Yoshinaka, Heisuke Sakai, Tatsuo Kaneko, and Hideyuki Murata

School of Materials Science, Japan Advanced Institute of Science and Technology, Japan

12:00-12:15 S2-8

Study of hysteresis behaviors caused by ionic motion in tin perovskite thin films

Taishi Noma, Dai Taguchi, Takaaki Manaka, and Mitsumasa Iwamoto

Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Japan

12:25-13:05 Lunch seminar for students

Session 5

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

Dr. Naoki Matsuda (AIST)

13:20-13:40 I5-1 (Invited)

Developing efficient OLEDs using active materials with both efficient internal generation and external extraction

Chung-Chih Wu

Department of Electrical Engineering, National Taiwan University, Taiwan

13:40-14:00 I5-2 (Invited)

Oxynitride thin films: Model systems for photocatalysis

Thomas Lippert

Paul Scherrer Institute, Switzerland

14:00-14:20 I5-3 (Invited)

Design of soft-biomaterials based on the interfacial water structure for advanced medical devices

M. Tanaka^{1,2}, S. Kobayashi¹, T. Hoshiba², K. Fukushima², A. Kashiwazaki¹, F. Aratsu¹, and D. Murakami¹

¹*Institute for Materials Chemistry and Engineering, Kyushu University, Japan*

²*Frontier Center for Organic Materials, Yamagata University, Japan*

14:20-14:40 I5-4 (Invited)

Bacteriophage based piezoelectric energy generation

Seung-Wuk Lee

UC Berkeley, USA

14:40-15:00 coffee break

Session 6

Chairperson: Dr. Yuko Ueno (Nippon Telegraph and Telephone Corporation)

Dr. Naoki Matsuda (National Institute of Advanced Industrial
Science and Technology)

15:00-15:20 I6-1 (Invited)

Bioanalytical device technology accelerates up-and-coming exosome medicine

Takanori Ichiki^{1,2}

¹*Department of Materials Engineering, School of Engineering, The University of Tokyo, Japan*

²*Innovation Center of Nanomedicine (iCONM), Kawasaki Institute of Industry Promotion, Japan*

15:20-15:40 I6-2 (Invited)

Smart nanopores to identify bacteria and viruses

Masateru Taniguchi, Takashi Washio, Tomoji Kawai

The Institute of Scientific and Industrial Research, Osaka University, Japan

15:40-16:00 I6-3 (Invited)

Towards organic electronics for the interfacing with neurons

Andreas Offenhäusser

Institute of Complex Systems (ICS-8), Forschungszentrum Jülich, Germany

16:00-16:15 coffee break

Session 7

Chairperson: Prof. Akira Baba (Niigata University)

Dr. Naoki Matsuda (AIST)

16:15-16:30 O7-1

Graphene aptasensor built at the inner wall of a hollow 3D structure

Yuko Ueno¹, Tetsuhiko Teshima¹, Calum Henderson^{1,2}, and Hiroshi Nakashima¹

¹*NTT Basic Research Laboratories, NTT Corporation, Japan*

²*School of Chemistry, University of Edinburgh, UK*

16:30-16:45 O7-2

Plasma-on-chip: An innovative microdevice towards cell fate control using a non-thermal atmospheric pressure plasma

Shinya Kumagai¹, Mime Kobayashi², Jun-Seok Oh¹, Tetsuji Shimizu³, Minoru Sasaki⁴

¹*Meijo University, Japan*

²NAIST, Japan

³AIST, Japan

⁴Toyota Technological Institute, Japan

16:45-17:00 O7-3

Observation of phase separation at freestanding bilayer lipid membrane under osmotic pressure

Azusa Oshima¹, Hiroshi Nakashima¹ and Koji Sumitomo²

¹NTT Basic Research Laboratories, Japan

²University of Hyogo, Japan

17:00-17:15 O7-4

Electrochemical microscopy for the oxygen consumption of contractile myotubes

Tomoyuki Yasukawa, Ryoji Hosohara, Yuki Igaki and Fumio Mizutani

Graduate School of Material Science, University of Hyogo, Japan

17:15-17:30 O7-5

Sensitive observation of spontaneous action potential in neurons on the plasmonic chip

Wataru Minoshima, Chie Hosokawa, Suguru N. Kudoh and Keiko Tawa

School of Science and Technology, Kwansai Gakuin University, Japan

Session 8

Chairperson: Dr. Toshiki Yamada (National Institute of Information and
Communications Technology)

Prof. Tatsunosuke Matsui (Mie University)

16:15-16:30 O8-1

Fabrication of chemically modified nanodiamond particles for magnetic resonance imaging (MRI) contrast agents

T. Nakamura¹, T. Ohana¹, T. Tsuchiya¹, T. Matsumoto^{2,3}, T. Suzuki³, and T. Hasebe^{2,3}

¹National Institute of Advanced Industrial Science and Technology (AIST), Japan

²Tokai University School of Medicine, Japan

³Keio University, Japan

16:30-16:45 O8-2

Photoisomerization of polyimide thin films prepared by vapor deposition polymerization
Takatoshi Yamazaki, Kuniaki Tanaka, and Hiroaki Usui
Division of Applied Chemistry, Tokyo University of Agriculture and Technology, Japan

16:45-17:00 O8-3

Glycolytic oscillations in cancer cells

Takashi Amemiya

Graduate School of Environment and Information Sciences, Yokohama National University, Japan

17:00-17:15 O8-4

Hydro-phobic/philic modification by organic polymer introduction to fine aqua drop detection

Jin Kawakita

National Institute for Materials Science, Japan

17:15-17:30 O8-5

Emission enhancement of water-soluble dyes immobilized in DNA ultrathin films by localized surface plasmon resonance of gold nanoparticles

Hiroya Morita¹, Miyuu Mizunoe¹, Hideki Kawa², Kenji Takehara¹, Naoki Matsuda³, and Toshihiko Nagamura^{1,3}

¹Department of Creative Engineering, National Institute of Technology, Kitakyushu College, Japan

²Department of Applied Chemistry and Biochemical Engineering, Faculty of Engineering, Shizuoka University, Japan

³National Institute of Advanced Industrial Science and Technology, Japan

18:30-20:30 Banquet

June 2 (Saturday)

Registration 8:30-11:00

Session 9

Chairperson: Prof. Takashi Amemiya (Yokohama National University)

Prof. Shigeki Naka (University of Toyama)

9:00-9:15 O9-1

Relationship between series resistance in solar cell estimated from current-voltage slope at open-circuit condition and that in equivalent circuit

Kazuya Tada

Division of Electrical Materials and Engineering, University of Hyogo, Japan

9:15-9:30 O9-2

Spectroscopic study of electric field induced optical second harmonic generation from PCPDTBT and PC₇₁BM thin films

Ibrahim M Alrougy^{1,2}, Dai Taguchi¹, Takaaki Manaka¹

¹*Department of Electrical and Electronic Engineering, Tokyo Institute of Technology, Japan*

²*King Abdulaziz City for Science and Technology, Kingdom of Saudi Arabia*

9:30-9:45 O9-3

Transmission surface plasmon resonance image detected by smartphone camera

Chutiparn Lertvachirapaiboon, Akira Baba, Kazunari Shinbo and Keizo Kato

Graduate School of Science and Technology, Niigata University, Japan

9:45-10:00 O9-4

Preparation of SiO₂ precursors soluble in organic solvents

Masayasu Igarashi, Tomohiro Matsumoto, Fujio Yagihashi, Kazuhiko Sato

and Shigeru Shimada

National Institute of Advanced Industrial Science and Technology (AIST), Japan

10:00-10:15 O9-5

Anisotropic photoconductive properties of aromatic polyimide films containing diphenyl-benzidine structure with high electron-donating ability

Shinji Ando, Chiaki Takemasa, Tepei Chino, and Ryohei Ishige

Department of Chemical Science and Engineering, Tokyo Institute of Technology, Japan

10:15-10:30 O9-6

Electrochemically switchable porphyrin molecular-tweezers

Takashi Arimura, Masaru Mukai, Jung-Hee Do and Kenichi Tominaga
National Institute of Advanced Industrial Science and Technology (AIST), Japan

10:30-10:45 coffee break

Session 10

Chairperson: Prof. Eiji Itoh (Shinshu University)

Prof. Kazuya Tada (University of Hyogo)

10:45-11:00 O10-1

Single-molecule and real time measurements of Streptavidin-biotin bond by atomic force microscopy

Hiroyuki Tahara¹, Evan Angelo Quimada Mondarte¹, Takashi Nyu¹, Tatsuhiko Maekawa¹,
and Tomohiro Hayashi^{1,2}

¹Department of Materials Science and Engineering, School of Materials and Chemical
Technology, Tokyo Institute of Technology, Japan

²JST-PRESTO, Japan

11:00-11:15 O10-2

*Enhancing the performance of perovskite solar cells using additive and solvent vapor
annealing treatments*

Vincent Obiozo Eze, Hiroyuki Okada, Yoshiyuki Seike, Tatsuo Mori

Department of Electricity and Materials Engineering, Aichi Institute of Technology, Japan

11:15-11:30 O10-3

*Low temperature reactions of thermally stable guanidine:cesium iodide blends with SnI₂
and PbI₂ for perovskite solar cells*

Hironobu Ishibashi¹, Mikimasa Katayama¹, Senku Tanaka², and Toshihiko Kaji¹

¹Department of Applied Physics, Tokyo University of Agriculture and Technology, Japan

²Faculty of Science and Engineering, Kindai University, Japan

11:30-11:45 O10-4

*Effect of photo-crosslinking condition of the poly(vinyl cinnamate) gate dielectrics on the
electric performance of the solution processed organic field effect transistor*

Heisuke Sakai, Yushi Tsuji, and Hideyuki Murata

Japan Advanced Institute of Science and Technology (JAIST), Japan

11:45-12:00 O10-5

Development and evaluation of electro-optic chromophores and polymers for applications to terahertz wave generation and detection

*Toshiki Yamada¹, Takahiro Kaji¹, Isao Aoki¹, Yoshihiro Takagi¹, Chiyumi Yamada¹,
Maya Mizuno², Shingo Saito³, Akira Otomo¹*

¹Advanced ICT Research Institute, National Institute of Information and Communications Technology, Japan,

²Applied Electromagnetic Research Institute, National Institute of Information and Communications Technology, Japan

³Advanced ICT Research Institute, National Institute of Information and Communications Technology, Japan

Closing Ceremony

12:00-12:05 Award Ceremony and Closing Address

Chair of the Technical Committee on Organic Molecular Electronics, IEICE

Tatsuo Mori

Aichi Institute of Technology, Japan

Poster session

May 31 (Thursday) 17:20-19:20

- P-01 Enhanced electrical properties and air stability in high-density amorphous organic films
Yu Esaki¹, Takeshi Komino^{1,2}, Toshinori Matsushima^{1,2,3}, and Chihaya Adachi^{1,2,3}
¹OPERA, Kyushu University, Japan
²JST ERATO, Japan
³WPI-I2CNER, Japan
- P-02 Isoindigo benzodifuran based Ambipolar Organic Field-effect Transistors
Tomotsugu Takaya¹, Melaku Dereje Mamo², Makoto Karakawa¹ and Yong-Young Noh²
¹Kanazawa University, Japan
²Dongguk University, Republic of Korea
- P-03 TiO₂ micropattern formation on COP substrate by vacuum ultraviolet irradiation in dried air atmosphere
Cheng-Tse Wu, Ahmed I. A. Soliman, Toru Utsunomiya, Takashi Ichii, and Hiroyuki Sugimura
Department of Materials Science and Engineering, Kyoto University, Japan
- P-04 Direct bonding of ultra-flat titanium thin film and polymer at ambient temperature
Lihting Lin, Toru Utsunomiya, Takashi Ichii, and Hiroyuki Sugimura
Department of Materials Science and Engineering, Kyoto University, Japan
- P-05 Highly efficient photoreduction of graphene oxide using alcohol solutions
Kunhua Yu, Yudi Tu, Toru Utsunomiya, Takashi Ichii, Hiroyuki Sugimura
Department of Materials Science and Engineering, Kyoto University, Japan
- P-06 Preparation of TIPS pentacene/PS blend films by electrostatic spray deposition for organic field-effect transistors
Norio Onojima, Takumi Ozawa, Takuya Sugai, and Shunsuke Obata
Department of Electrical and Electronic Engineering, University of Yamanashi, Japan

- P-07 Development of an Electrochromic Device Consisting of Ferrocene- and Viologen-Based Ionic Liquids
Kazuaki Uranaka, Hironobu Tahara, Takamasa Sagara, and Hiroto Murakami
Graduate School of Engineering, Nagasaki University, Japan
- P-08 Chemically modified apertures enhanced stability of free-standing bilayer lipid membranes
Daichi Yamaura¹, Daisuke Tadaki¹, Hideaki Yamamoto², and Ayumi Hirano-Iwata^{1,3}
¹Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication, Tohoku University, Japan
²Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Japan
³Advanced Institute for Materials Research, Tohoku University, Japan
- P-09 Ion channel array based on silicon (Si) microfabrication
Ryusuke Miyata, Daichi Yamaura, Daisuke Tadaki, and Ayumi Hirano-Iwata
Tohoku University, Japan
- P-10 Ferrocenyl-Alkyl Mixed Self-Assembled Monolayer Formed on Hydrogen-Terminated Silicon
Toru Utsunomiya, Yuki Takatani, Takashi Ichii, and Hiroyuki Sugimura
Department of Materials Science and Engineering, Graduate School of Engineering, Kyoto University, Japan
- P-11 Probing internal electric field in organic photoconductors by using electric-field-induced optical second-harmonic generation
Dai Taguchi¹, Takaaki Manaka¹, Mitsumasa Iwamoto¹, Kazuko Sakuma², Kaname Watariguchi², and Masataka Kawahara²
¹School of Engineering, Tokyo Institute of Technology, Japan
²Specialty Chemicals Development Center, Canon Inc., Japan
- P-12 Visualizing distribution of triboelectric charge on PMDA-ODA polyimide film by using optical second-harmonic generation imaging technique
Dai Taguchi, Takaaki Manaka, Mitsumasa Iwamoto,
School of Engineering, Tokyo Institute of Technology, Japan

- P-13 Decomposition of Dipicolinic Acid Using RF Oxygen Plasma Sterilizer
S. Hori, N. Hayashi
Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, Japan
- P-14 Ozone Concentration Effect on Sterilization of Fruit Surface
K. Yamamoto, N. Hayashi
Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, Japan
- P-15 Characteristics of narrow tubular medical devices sterilization by using active oxygen species with low-pressure plasma
Yu-shian Liao, Shogo Miura, and Nobuya Hayashi
Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, Japan
- P-16 Sterilization of Spore-forming bacteria in Small Vial Using Electron Cyclotron Resonance Plasma
Tatsuya Nishikawa¹, Nobuya Hayashi¹ and Akira Yonesu²
¹Interdisciplinary Graduate School of Engineering Science, Kyushu University, Japan
²Department of Electrical and electronics Engineering, University of the Ryukyus, Japan
- P-17 Fabrication Using 2-step and Air-Flowing Process for Organic Perovskite Solar Cells
Yoshiki Kondo, Masaki Kawai, Vincent Obiozo Eze, Yoshiyuki Seike, Tatsuo Mori
Aichi Institute of Technology, Japan
- P-18 Vertical organic transistors using a hydrogen-bonded pigment
M. Okamoto¹, Cigdem Yumusak², Eric D. Glowacki², Niyazi S. Sariciftci², T. Suenobu¹, and K. Nakayama¹
¹Department of Material and Life Science, Osaka University, Japan
²Linz Institute for Organic Solar Cells (LIOS), Johannes Kepler University Linz, Austria
- P-19 Solution processable graphene template layer for the molecular orientation control of organic semiconductors
Keitaro Yamada¹, Chiho Katagiri^{1,2}, Kohta Kitagawa¹, Tomoyoshi Suenobu¹, and Ken-ichi Nakayama^{1,2}
¹Department of Material and Life Science, Osaka University, Japan
²Department of Organic Materials Engineering, Yamagata University, Japan

- P-20 Low Temperature Deposition Technique of Photovoltaic Cell by Electrospray
Daiki Tangiku, Nana Inagaki, Seiya Shiiba, Tatsuo Mori, and Yoshiyuki Seike
 Graduate School of Engineering Electrical and Electronics Engineering, Aichi Institute of Technology, Japan
- P-21 Evaluation of exciton binding energy in organic thin films integrated into a planar device
Akinori Sejima, Tomoyoshi Suenobu, and Ken-ichi Nakayama
 Department of Material and Life Science, Osaka University, Japan
- P-22 Properties of organic thin-film photovoltaic cells based on PTB7 and C60 using additive of PCBM
Naoki Hirohata, Kazumasa Uetani, Daiki Tangiku, Yoshiyuki Seike, Tatsuo Mori
 Aichi Institute of Technology, Japan
- P-23 Effect of active oxygen species in torch type DBD plasma on normal and cancer cells
Yukie Miyamaru, Nobuya Hayashi, Reona Aijima and Yoshio Yamashita
 Graduate School of Engineering Sciences, Kyushu University, Japan
- P-24 SERS substrates applied with size-controlled silver nanoplates
Hirofumi Kawazumi¹, Kazunori Sakakita¹, Kengo Ito², Naohiro Takeda²
¹Department of Biological and Environmental Chemistry, Kindai University, Japan
²Ito Research Institute Co., Ltd., Japan
- P-25 Preparation of clay polymer nanocomposite film using glycol lignin as an organic binder.
Ryo Ishii, Asami Suzuki, Takeo Ebina, Thi Thi Nge, Tatsuhiko Yamada
 National Institute of Advanced Industrial Science and Technology (AIST), Japan
 Forestry and Forest Products Research Institute (FFPRI), Japan
- P-26 Analyzing Carrier Behavior in Double-layer Organic Photovoltaic Cells with Different Organic Film Thickness Composition using Laser Beam Induced Current Measurement
Atsuo Sadakata
 Faculty of Science and Engineering, Kyushu Sangyo University, Japan

- P-27 A Synthesis of Filamentous Carbon Nanomaterial/Carbon Fiber Paper Composites (FCN/CFP) with using Ni Catalysts
Naoto Kataoka¹, Hiroaki Aizawa¹, Haruka Matsumoto¹, Mika Shiraishi¹, Kiyoharu Nakagawa², Toshihiro Ando³, Mikka Nishitani-Gamo¹
¹Course of Applied Chemistry, Graduate School of Science and Engineering, Toyo University, Japan
²Department of Chemical Engineering, Kansai University, Japan
³National Institute for Materials Science, Japan
- P-28 Catalytic Deposition of a SiC thin-film on Si (100) surface in Organic Liquids
Haruka Matsumoto¹, Mika Shiraishi¹, Hidenobu Shiroishi², Shuji Komuro³, Toshihiro Ando⁴, Mikka Nishitani-Gamo¹
¹Course of Applied Chemistry, Graduate School of Science and Engineering, Toyo University, Japan
²Natinoal Institute of Technology, Tokyo College, Japan
³Course of Electricity, Electronics and Communications, Graduate School of Science and Engineering, Toyo University, Japan
⁴National Institute for Materials Science, Japan
- P-29 A Synthesis of the Marimo-like Carbon/PVA Sponge Composite
Masao Shinozaki¹, Haruka Matumoto¹, Mika Shiraishi¹, Kiyoharu Nakagawa², Toshihiro Ando³, and Mikka Nishitani-Gamo¹
¹Course of Applied Chemistry, Graduate School of Science and Engineering, Toyo University, Japan
²Department of Chemical Engineering, Kansai University, Japan
³National Institute for Materials Science, Japan
- P-30 Mg-vapor atom behavior and nucleation mechanism on photochromic diarylethene surface
Ikumi Takemoto and Tsuyoshi Tsujioka
Faculty of Pure and Applied Sciences, Osaka Kyoiku University, Japan

- P-31 Plasma sputtering device using convergent magnetic field for GaN film production
Taisei Motomura, and Tatsuo Tabaru
 Sensor system engineering group, Advanced Manufacturing Research Institute,
 Department of Electronics and Manufacturing, National Institute of Advanced Industrial
 Science and Technology, Japan
- P-32 Enzymatic biofuel cell using fuel gel of fructose between graphene-coated carbon fiber
 cloth electrodes
 Yusuke Yonaha, Iku Kusajima, Toshinari Doi, Kenta Kuroishi, and Satomitu Imai
 Department of Precision Machinery Engineering, College of Science and Technology,
 Nihon University, Japan
- P-33 Improvement of high frequency dielectric properties of organic polymer substrate
 materials with inorganic fillers
Yusuke Imai¹, Susumu Takahashi², Akinori Kan², Yuji Hotta¹, Hiroataka Ogawa²
¹National Institute of Advanced Industrial Science and Technology (AIST), Japan
²Graduate School of Science and Technology, Meijo University, Japan
- P-34 Easy functionalization method and electrical characteristics of single conical pores with a
 polydopamine layer
Yukichi Horiguchi, Tatsuro Goda, and Yuji Miyahara
 Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University
 (TMDU), Japan
- P-35 Plastic Robotics with Organic Thin Film Transistor Array Fabricated on Curved Surfaces
M. Sakai¹, Y. Miyai¹, K. Watanabe¹, H. Ishimine¹, Y. Okada², H. Yamauchi¹, Y.
 Sadamitsu³,
 Y. Hashimoto³, N. Onodera³, and K. Kudo¹
¹Department of Electrical and Electronic Engineering, Chiba University, Japan
²Center for Frontier Science, Chiba University, Japan
³Nippon Kayaku Co. Ltd., Japan
- P-36 Temperature Dependent I-V Characteristics of InP@ZnS Quantum Dot Single-Electron
 Transistor
Yoon Young Choi, Yutaka Majima

Laboratory for Materials and Structures, Tokyo Institute of Technology, Japan

- P-37 Photorefractive composites with photoconducting oligomer-insulating polymer blends
Naoyuki Yoshizawa^{1,2}, Koya Izumida¹, K.-L. Wang³, Masaki Horie³, Takashi Fujihara⁴,
Takeshi Kinoshita², Satoshi Wada¹, and Takafumi Sassa¹
¹Photonics Control Technology Team, RIKEN RAP, Japan
²Department of Electronics and Electrical Engineering, Keio University, Japan
³Department of Chemical Engineering, National Tsing Hua University, Taiwan
⁴Innovative Organic Device Laboratory, Institute of Systems, Information Technologies
and Nanotechnologies, Japan
- P-38 Dependence of raw material particle size on electric properties of thin film of
hydrophilized carbon material synthesized by atmospheric pressure plasma method
Daiki Matsuo and Koichi Sakaguchi
Department of chemistry and applied chemistry, Saga University, Japan
- P-39 Quantity analysis of surfactant binding sites of atmospheric pressure treated hydrophilic
carbon material and dependence of surfactants chain length by potentiometric titration
Kota Sonoda, Masaya Ushijima, Noboru Takisawa, Koichi Sakaguchi
Department of chemistry and applied chemistry, Saga University, Japan
- P-40 Synthesis of amino graphene oxide derivatives with different alkyl chain length
Riona Hayashi, Ai Hirakawa and Koichi Sakaguchi
Department of chemistry and applied chemistry, Saga University, Japan
- P-41 Effect of environmental gases for electrical properties of graphene oxide and its
derivatives
Yuka Katayama, Asami Otake and Koichi Sakaguchi
Department of chemistry and applied chemistry, Saga University, Japan
- P-42 Semitransparent organic solar cells with polyethylenimine ethoxylated interfacial layer
using lamination process
Keisuke Shoda, Masahiro Morimoto, Shigeki Naka, and Hiroyuki Okada
Graduate School of Science and Engineering for Research, University of Toyama, Japan

- P-43 Elucidation of DNA and RNA base molecules adsorbed on gold nanoparticles using a flocculation-SERS method
Masako Seki¹, Hiroataka Okabe², Naoki Matsuda², and Masayuki Futamata¹
¹Graduate School of Science and Engineering, Saitama University, Japan
²National Institute of Advanced Industrial Science and Technology, Japan
- P-44 Enzymatic biofuel cell using graphene electrodes with improved interfacial electron transfer
Kenta Kuroishi¹, Toshinari Doi¹, Kazuki Hoshi¹, Kazuo Muramatsu², Yasuhiro Nishioka¹
and Satomitsu Imai¹
¹College of science and technology, Nihon University, Japan
²Incubation Alliance, INC, Japan
- P-45 Control of threshold voltage in a low-voltage operation organic field effect transistor
Yasuyuki Abe¹, Heisuke Sakai¹, Toan Thanh Dao², and Hideyuki Murata¹
¹Japan Advanced Institute of Science and Technology, Japan
²University of Transport and Communications, Vietnam
- P-46 Highly sensitive resistive-type acetone sensor using platinum nano-particle decorated alumina nanorods/organic semiconductor nano-composites
Eiji Itoh¹, Hiroaki Sugiura¹, and Hironobu Ono²
¹Department of Electrical and Computer Engineering, Faculty of Engineering, Shinshu University, Japan
²Nippon Shokubai Co. Ltd., Japan
- P-47 Construction of high-sensitive immunosensor with polymer brushes
Yuka Ozawa^{1,2}, Hidenobu Aizawa², Yuji Kimura¹ and Kazunori Yamada¹
¹College of Industrial Technology, Nihon University, Japan
²National Institute of Advanced Industrial Science and Technology (AIST), Japan
- P-48 Light emission characteristics of hyperbranched copolymer with photon upconversion dyes system
Hirokazu Yamane¹, Urata Yasutaka¹, Genta Takatoki¹, Hidekazu Konishi²
and Toshikiko Nagamura¹
¹National Institute of Technology, Kitakyushu College, Japan

²ASAHI YUKIZAI Corporation, Japan

- P-49 Ion-Assisted Deposition of Vinyl Polymer with Amino Units
Koichi Momose, Yuji Komuro, Kuniaki Tanaka, and Hiroaki Usui
Division of Applied Chemistry, Tokyo University of Agriculture and Technology, Japan
- P-50 Preparation of Diamond Nanoparticle Layers by A Surface Adsorption Method
Yuriko Sugimoto¹, Fujio Ohishi², Kuniaki Tanaka¹, and Hiroaki Usui¹
¹Division of Applied Chemistry, Tokyo University of Agriculture and Technology, Japan
²Research Institute for Integrated Science, Kanagawa University, Japan
- P-51 The effect of the particle size and the morphology of alumina powders on the structure of alumina coating on metal via electrophoretic deposition with added polydimethylsiloxane-based organic-inorganic hybrid materials
Kazuya Hayashi, Yusuke Aoki
Graduate School of Engineering, Mie University, Japan
- P-52 Tunable thermos-plasmonic effect induced by grating-coupled surface plasmon excitation on metal-coated digital optical disc data storages
Supeera Nootchanat¹, Sanong Ekgasit², Chutiparn Lertvachirapaiboon¹, Kazunari Shinbo¹, Keizo Kato¹, Akira Baba¹
¹Center for Transdisciplinary Research and Graduate School of Science and Technology, Niigata University, Japan
²Sensor Research Unit, Department of Chemistry, Faculty of Science, Chulalongkorn University, Thailand
- P-53 Effect of Nanostructured Active Layers in Organic Polymer Thin Film Solar Cells
Thitirat Putnin^{1,2}, Supeera Nootchanat¹, Chutiparn Lertvachirapaiboon¹, Ryouyusuke Ishikawa¹, Kazunari Shinbo¹, Keizo Kato¹, Kontad Ounnunkad^{2,3}, and Akira Baba¹
¹Graduate School of Science and Technology, Niigata University, Japan
²Department of Chemistry and Center of Excellence for Innovation in Chemistry (PERCH-CIC), Faculty of Science, Chiang Mai University, Thailand
³Center for Excellence in Materials Science and Technology, Chiang Mai University, Thailand

- P-54 Signal Enhancement of Transmission Surface Plasmon Resonance IgG Sensor by Gold Nanoparticle Growth
Theerasak Juagwon^{1,2}, Chutiparn Lertvachirapaiboon¹, Tanakorn Osotchan²,
Toemsak Srihirin², Kazunari Shinbo¹, Keizo Kato¹, and Akira Baba¹
¹Graduate School of Science and Technology, Niigata University, Japan
²Material Science and Engineering Program, Faculty of Science, Mahidol University,
Thailand
- P-55 Photon upconversion dyes system with red to yellow wavelength conversion function
Hirokazu Yamane¹, Mayo Kawahara¹, Genta Takatoki¹, Masataka Taguchi¹,
Yasuhiro Yamasaki², and Toshihiko Nagamura¹
¹National Institute of Technology, Kitakyushu College, Japan
²Orient Chemical Industries Co., Ltd., Japan
- P-56 Development of a portable electrochemical immunosensor
Wataru Iwasaki¹, Ryoji Kurita², Osamu Niwa³, and Masaya Miyazaki^{1,4,5}
¹Advanced Manufacturing Research Institute, National Institute of Advanced Industrial
Science and Technology (AIST), Japan
²Biomedical Research Institute, AIST, Japan
³Advanced Science Research Laboratory, Saitama Institute of Technology, Japan
⁴Faculty of Engineering, Hokkaido University, Japan
⁵School of Computer Science and Systems Engineering, Kyushu Institute of Technology,
Japan

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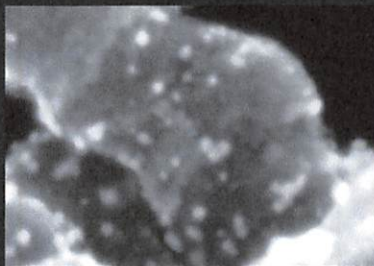
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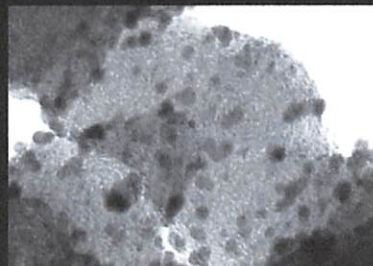
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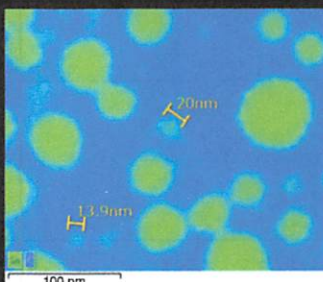


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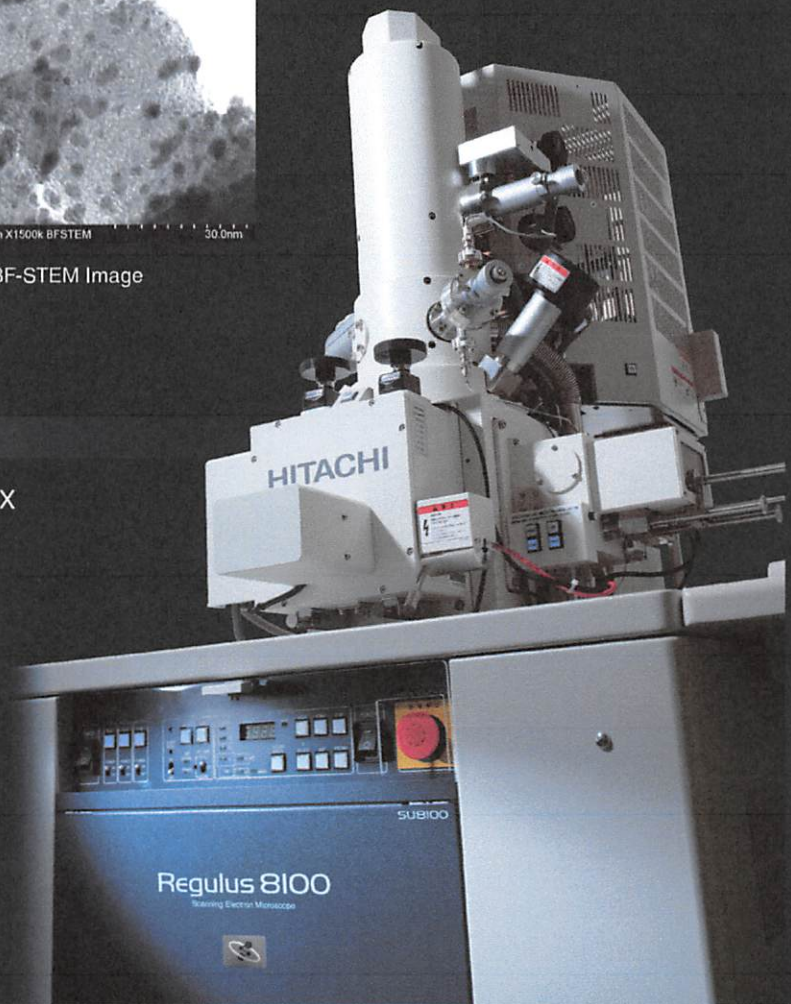
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