

December 12 (Monday)

- 10:00-17:30 **Registration**
- 10:30-10:40 **Opening remarks**
Takaaki Manaka (Tokyo Institute of Technology)
- 10:40-11:20 **Plenary Lecture 1**
Chair : Toshiki Yamada (NICT)
- 10:40-11:20 <PL-1> **Present and future spin-on electro-optic waveguide modulator**
°Shiyoshi Yokoyama^{1,2}, Hiromu Sato¹, Alisa Bannaron¹, Jiawei Mao², Futa Uemura²
¹Institute for Materials Chemistry and Engineering, Kyushu University, Japan
²Department of Molecular and Material Science, Kyushu University, Japan
- 11:20-11:30 **Break**
- 11:30-12:50 **Session 1 : Organic semiconductor materials and devices I**
Chair : Hirotake Kajii (Osaka University)
- 11:30-11:55 <S1-I-1> **Realization of low-work-function electrodes using strong bases and their application to organic light-emitting diodes**
(Invited) °Hirohiko Fukagawa¹, Tsubasa Sasaki¹, Takuya Okada¹, Taku Oono¹, Takahisa Shimizu¹
¹NHK Science & Technology Research Laboratories, Japan
- 11:55-12:20 <S1-I-2> **Multifunctional materials: design strategies towards organic crystals, co-crystals based photosensitizers**
(Invited) Debasish Barman¹, °Parameswar Krishnan Iyer¹
¹Department of Chemistry, Centre for Nanotechnology, School of Health Science and Technology, Indian Institute of Technology Guwahati, India.
- 12:20-12:35 <S1-O-1> **Local spatial distribution and enormous red shift of molecularly-oriented J-aggregates**
°Tetsuya Aoyama¹, Atsuya Muranaka², Masanobu Uchiyama², Yutaka Yamagata¹, Jian Yu³, Shinya Matsumoto³, Masamitsu Ishitobi⁴, Hirohito Umezawa⁵, Toshihiko Tanaka⁶
¹RIKEN Center for Advanced Photonics (RAP), Japan
²RIKEN Center for Sustainable Resource Science (CSRS), Japan
³Yokohama National University, Japan
⁴ASET Sumitomo Chemical laboratory, Tsukuba Research Laboratory, Sumitomo Chemical Co. Ltd, Japan
⁵National Institute of Technology, Fukushima College, Japan
⁶Hamamatsu University School of Medicine, Japan
- 12:35-12:50 <S1-O-2> **Multicolor emission and organic light-emitting diodes with controlling crystallinity**
°Masahiro Morimoto¹, Kazuho Furukawa, Shigeki Naka¹
¹Academic Assembly Faculty of Engineering, University of Toyama, Japan
²Graduate School of Science and Engineering for Education, University of Toyama, Japan
- 12:50-14:00 **Lunch**
- 14:00-14:30 **Keynote Presentation 1**
Chair : Kiyooki Usami (Osaka Sangyo University)
- 14:00-14:30 <KN-1> **Formation and interface control of polymer thin films by vapor deposition**
°Hiroaki Usui¹
¹Institute of Engineering, Tokyo University of Agriculture and Technology, Japan

14:30-14:40	Break	
14:40-16:00	Session 2 : Organic semiconductor materials and devices II / Soft material physics and applications in electronics	
		Chair : Masatoshi Sakai (Chiba University)
14:40-15:05	<S2-I-1> Impact of density of states in semiconducting polymers on performance of organic field-effect transistors	
	(Invited)	°Kyohei Nakano ¹ , Yumiko Kaji ¹ , Keisuke Tajima ¹ ¹ RIKEN, Center for Emergent Matter Science (CEMS), Japan
15:05-15:30	<S2-I-2> Layered organic semiconductors for high-performance printed transistors	
	(Invited)	°Shunto Arai ¹ ¹ Research Center for Functional Materials, National Institute of Materials Science (NIMS), Japan
15:30-15:45	<S2-O-1> Electrically reconfigurable logic circuits based on organic antiambipolar transistors	
		°Ryoma Hayakawa ¹ , Kosuke Honma ¹ , Shu Nakaharai ¹ , Yutaka Wakayama ¹ ¹ International Center for Materials Nanoarchitectonics (WPI-MANA), National Institute of Materials Science (NIMS), Japan
15:45-16:00	<S2-O-2> Crystal structure and mobility of polycrystalline thin films of Ph-BTBT-10 fabricated by precursor of supercooled highly ordered liquid crystal	
		°Hiroaki Iino ¹ , Jun-ichi Hanna ¹ ¹ Imaging Science and Engineering Research Center, Tokyo Institute of Technology, Japan
16:00-16:20	Break	
16:20-17:15	Session 3 : Fabrication and characterization of organic and molecular devices I	
		Chair : Hitoshi Suzuki (Hiroshima University)
16:20-16:45	<S3-I-1> Molecular-scale hardware that mimic synapses	
	(Invited)	°Christian A. Nijhuis ¹ ¹ Department of Molecules and Materials, MESA+ Institute for Nanotechnology, Molecules Center and Center for Brain-Inspired Nano Systems (BRAINS), Faculty of Science and Technology, University of Twente, Netherlands
16:45-17:00	<S3-O-1> Preparation of vertically oriented aromatic polyester thin films by thermal chemical vapor deposition	
		°Ryosuke Matsubara ¹ , Shuichiro Aida ¹ , Atsushi Kubono ¹ , Seiji Onohara ² , Yasuko Koshiba ² , Shohei Horike ² , Kenji Ishida ² ¹ Graduate School of Integrated Science and Technology, Shizuoka University, Japan ² Graduate School of Engineering, Kobe University, Japan
17:00-17:15	<S3-O-2> Dipolar energy as an electrical power source: dipole rotation in solids opens a new way for triboelectric generator	
		°Dai Taguchi ¹ , Takaaki Manaka ¹ , Mitsumasa Iwamoto ¹ ¹ Tokyo Institute of Technology, Japan
17:15-17:30	Break	
17:30-19:30	Poster Session	
17:30-19:30	On site	Odd number: 17:30-18:30 Even number: 18:30-19:30
19:00-19:30	On line	

- <P-1>* **Hole injection characteristics and annealing temperature dependence for organic light-emitting diodes using spontaneous polarization**
^oRyousuke Fukazawa¹, Masahiro Morimoto², Shigeki Naka²
¹Graduate School of Science and Engineering, University of Toyama, Japan
²Academic Assembly Faculty of Engineering, University of Toyama, Japan
- <P-2>* **Exciplex up-conversion-type organic light-emitting diode and operating mechanism by exciton diffusion**
^oTeppei Masuda¹, Masahiro Morimoto², Shigeki Naka²
¹Graduate School of Science and Engineering, University of Toyama, Japan
²Academic Assembly Faculty of Engineering, University of Toyama, Japan
- <P-3>* **Impact of Deposition Rate of Alq₃ on Charge Behaviors and Device Properties in Organic Light-Emitting Diodes**
^oShin Shinohara¹, Naoya Abe¹, Hisao Ishii¹, Yuya Tanaka²
¹Chiba University, Japan
²Gunma University, Japan
- <P-4> **Improved Characteristics of Polymer Light-Emitting Devices Utilizing Solution-Processable Inorganic Copper(I) Thiocyanate**
^oHirotake Kajii¹, Yuto Takayama¹, Shinsei Yamada¹, Maowei Huang¹, Masato Morifuji¹, Masahiko Kondow¹
¹Graduate School of Engineering, Osaka University, Japan
- <P-5> **Doped Lateral Organic Solar Cells**
^oJaseela Palassery Jaseela^{1,2}, Seiichiro Izawa^{1,2}, Masahiro Hiramoto^{1,2}
¹Institute for Molecular Science, Japan
²SOKENDAI, Japan
- <P-6>* **Donor/acceptor compositional dependence of bimolecular recombination constants in organic photovoltaics studied with modulation spectroscopy**
^oRyoya Sugita¹, Takashi Kobayashi^{2,4}, Takashi Nagase^{2,4}, Hiroyoshi Naito^{3,4}
¹Department of Physics and Electronics, Osaka Prefecture University, Japan
²Department of Physics and Electronics, Osaka Metropolitan University, Japan
³Department of Applied Chemistry, Osaka Metropolitan University, Japan
⁴The Research Institute for Molecular Electronic Devices, Osaka Metropolitan University, Japan
- <P-7> **Initial Photocarrier Generation Process in OPV Observed with Light Triggered Time Domain Reflectometry**
Tomoaki Mashiko¹, Koki Takano¹, Akira Kaino¹, Sou Kuromasa¹, Shintaro Fujii¹, Tatsuya Omori¹, ^oMasatoshi Sakai¹, Hirofumi Mino²
¹Department of Electrical and Electronic Engineering, Chiba University, Japan
²Graduate School of Global and Transdisciplinary Studies, Chiba University, Japan
- <P-8>* **Improvement of Non-fullerene Organic Solar Cells by Using the Localized Surface Plasmon Resonance Effect of Metal Nanoparticles**
^oYuting Miao¹, Sachiko Jonai¹, Kazunari Shinbo¹, Keizo Kato¹, Akira Baba¹
¹Graduate School of Science and Technology and Faculty of Engineering, Niigata University, Japan
- <P-9>* **Organic Schottky Photodiode Enhanced by Surface Plasmon Excitation**
^oSupakeit Chanarsa^{1,2,3}, Kazunari Shinbo¹, Keizo Kato¹, Kontad Ounnunkad^{2,3,4}, Akira Baba¹
¹Graduate School of Science and Technology and Faculty of Engineering, Niigata University, Japan
²Department of Chemistry, Faculty of Science, Chiang Mai University, Thailand
³Center of Excellence for Innovation in Chemistry, Faculty of Science, Chiang Mai University, Thailand
⁴Research Center on Chemistry for Development of Health Promoting Products from Northern Resources, Chiang Mai University, Thailand
- <P-10> **Controlling the TiO₂-Dye Nanomolecular Interactions for Improving the Photoconversion in Transparent Dye-sensitized Solar Cell**
^oPritha Roy¹, Yuki Kurokawa², Shyam S. Pandey²
¹Department of Physics, Jagannath University, Bangladesh
²Graduate School of Life Science and System Engineering, Kyushu Institute of Technology, Japan

- <P-11> **OPTIMIZATION OF DEVICE PARAMETERS FOR BACK CONTACT TCO-LESS DYE SENSITIZED SOLAR CELLS**
^oMd. Zaman Molla¹, Ajay Kumar Baranwal², Shuzi Hayase², Shyam S. Pandey³
¹Ahsanullah University of Science and Technology, Bangladesh
²info-Powered Energy System Research Center, University of Electro-Communications, Japan
³Graduate School of Life Science and System Engineering, Kyushu Institute of Technology, Japan
- <P-12>* **Fabrication and Characterization of Bifacial Dye-Sensitized Solar Cells Utilizing Indolene Dye with Iodine and Cobalt-based Redox Electrolytes**
^oSuraya Shaban¹, Shyam S. Pandey¹
¹Graduate School of Life Science and System Engineering, Kyushu Institute of Technology, Japan
- <P-13>* **Design, Synthesis and Photophysical Characterization of Multifunctional NIR Dyes for Dye-Sensitized Solar Cells**
^oKota Mori¹, Yuki Kurokawa¹, Shyam S. Pandey¹
¹Graduate School of Life Science and System Engineering, Kyushu Institute of Technology, Japan
- <P-14>* **Effect of Light Irradiation on Giant Surface Potential of Polar Organic Molecules on Insulator Layer**
^oKeisuke Kurihara¹, Hideyuki Kayaguchi¹, Masaya Kitaoka¹, Hisao Ishii¹, Yuya Tanaka²
¹Chiba University, Japan
²Gunma University, Japan
- <P-15>* **Effect of a crucible heating on the surface potential of 1,3,5-tris(1-phenyl-1H-benzimidazol-2-yl)benzene**
^oHideyuki Kayaguchi¹, Keisuke Kurihara¹, Hisao Ishii¹, Yuya Tanaka²
¹Chiba University, Japan
²Gunma University, Japan
- <P-16>* **Fabrication and Characteristics of Semitransparent Organic Position Sensitive Detector with thin Ag electrode**
^oIzuto Takimoto¹, Ayumu Nagakawa¹, Taichiro Morimune¹, Hirotake Kajii²
¹Department of Electronics Systems of Engineering, National Institute of Technology Kagawa College, Japan
²Graduate School of Engineering, Osaka University, Japan
- <P-17> **Response Properties of Organic Position Sensitive Detectors based on PEDOT:PSS Surface Resistive Layers with Different Resistivities**
^oTaichiro Morimune¹, Hirotake Kajii²
¹Department of Electronics Systems of Engineering, National Institute of Technology Kagawa College, Japan
²Graduate School of Engineering, Osaka University, Japan
- <P-18> **Fabrication and characterization of pn-junction metal phthalocyanine nanorods using vacuum deposition**
^oYasuko Koshiba^{1,2}, Iori Sugimoto¹, Kenta Higashida¹, Shohei Horike^{1,2,3}, Kenji Ishida^{1,2}
¹Graduate school of Engineering, Kobe University, Japan
²Research Center for Membrane and Film Technology, Kobe University, Japan
³PRESTO, Japan Science and Technology Agency, Japan
- <P-19>* **Thermally stable n-type carbon nanotubes doped with organic superbases for flexible thermoelectric generators**
^oMayuko Nishinaka¹, Shohei Horike^{1,2,3}, Yasuko Koshiba^{1,2}, Kenji Ishida^{1,2}, Qingshuo Wei⁴, Kouki Akaike⁴, Kazuhiro Kirihara⁴, Masakazu Mukaida⁴
¹Graduate school of Engineering, Kobe University, Japan
²Research Center for Membrane and Film Technology, Kobe University, Japan
³PRESTO, Japan Science and Technology Agency, Japan
⁴Nanomaterials Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Japan
- <P-20>* **Hole dominant transport in halogenated p-benzoquinone complexes of diamionaphthalene**
^oMallela Nikhil Rao¹, Takehiko Mori¹
¹Tokyo Institute of Technology, Department of Materials Science and Engineering, Japan

- <P-21> **Fabrication and Characterization of Organic Field-Effect Transistors utilizing Oriented Thin films Novel DA Type Conjugated Copolymers: Implications of F Substitution**
 °Moulika Desu¹, Shyam S. Pandey¹, Guan-Lin Chen², Leeyih Wang²
¹Graduate School of Life Science and System Engineering, Kyushu Institute of Technology, Japan
²Department of Mol. Science and Engineering, National Taipei University of Technology, Taiwan
- <P-22>* **Fabrication of flexible organic thin film transistors with liquid crystalline organic semiconductor, Ph-BTBT-10**
 °Issei Suzuki¹, Junichi Hanna¹, Hiroaki Iino¹
¹Imaging Science and Engineering Research Center, Tokyo Institute of Technology, Japan
- <P-23>* **Operation Mechanism of n-Channel Organic Floating-Gate Memories Based on Donor-Acceptor Polymer Semiconductors**
 °Naoyuki Nishida¹, Takashi Nagase^{1,2}, Takashi Kobayashi^{1,2}, Hiroyoshi Naito^{2,3}
¹Department of Physics and Electronics, Osaka Metropolitan University, Japan
²The Research Institute for Molecular Electronic Devices (RIMED), Osaka Metropolitan University, Japan
³Department of Applied Chemistry, Osaka Metropolitan University, Japan
- <P-24>* **Device Characteristics of Electrically Programmable Organic Transistor Memories Using Polymer-Small Molecules Composite Floating-Gate Layers**
 °Takaki Adachi¹, Takashi Nagase^{1,2}, Naoyuki Nishida¹, Takashi Kobayashi^{1,2}, Hiroyoshi Naito^{2,3}
¹Department of Physics and Electronics, Osaka Metropolitan University, Japan
²The Research Institute for Molecular Electronic Devices (RIMED), Osaka Metropolitan University, Japan
³Department of Applied Chemistry, Osaka Metropolitan University, Japan
- <P-25>* **Facile Fabrication and Characterization of Solid-State Dye-Sensitized Solar Cells Utilizing a Combination of Visible and NIR Dyes**
 °Yuki Kurokawa¹, Safalmani Pradhan¹, Shyam S. Pandey¹
¹Graduate School of Life Science and System Engineering, Kyushu Institute of Technology, Japan
- <P-26>* **Design and Synthesis of Novel NIR Sensitive Squaraine dyes altering Squaric Acid Core for Dye-Sensitized Solar Cells**
 °Safalmani Pradhan¹, Yuki Kurokawa¹, Shyam S. Pandey¹
¹Graduate School of Life Science and System Engineering, Kyushu Institute of Technology, Japan
- <P-27> **Inverted perovskite solar cells with transfer-printed electron transporting layers**
 °Eiji Itoh¹, Takao Ueda¹, Tatsuya Koike¹
¹Department of Electrical and Computer Engineering, Shizuoka University, Japan
- <P-28>* **Evaluation of degradation process of organic thin film solar cells using LBIC and optical second harmonic generation**
 °Yuki Okada¹, Dai Taguchi¹, Takaaki Manaka¹
¹Tokyo Institute of Technology, Japan
- <P-29> **Improvement of Photothermal Properties of Grating Structured Silver Nanoparticle Thin Films Using Simultaneous Propagating and Localized Surface Plasmon Excitation**
 °Tsubasa Kato¹, Kazunari Shinbo¹, Keizo Kato¹, Akira Baba¹
¹Graduate School of Science and Technology, Niigata University, Japan
- <P-30> **Synthesis of multicolor N-doped carbon quantum dots for bio-imaging applications**
 °Lee Hak Hyeon¹, Jongsung Kim¹
¹Department of Chemical and Biological Engineering, Gachon University, South Korea
- <P-31>* **Evaluation of thermal transport properties in acceptor-doped thiophene-based polymer thin films by the 3 ω method**
 °Kazuki Takayama¹, Shun Kanazawa¹, Goki Ito¹, Ryosuke Ikkatai¹, Kei Noda¹
¹Department of Electronics and Electrical Engineering, Keio University, Japan
- <P-32> **I-V measurement system for evaluating triboelectric generators as a dipolar polarization power source**
 °Akihiro Nagafuchi¹, °Dai Taguchi¹, Takaaki Manaka¹, Mitsumasa Iwamoto¹
¹Tokyo Institute of Technology, Japan

- <P-33>* **Study on molecular alignment change of tin phthalocyanine film grown by vacuum deposition in DC electric field**
 °Riku Koshiba¹, Dai Taguchi¹, Takaaki Manaka¹
¹Tokyo Institute of Technology, Japan
- <P-34> **Protein-resistant polyethylene glycol terminated polyurea film using trifunctional amines as a monomer of the polyurea sublayer**
 °Ryo Tabata¹, Ryosuke Matsubara², Atsushi Kubono²
¹Graduate School of Science and Technology, Shizuoka University, Japan
²Faculty of Engineering, Shizuoka University, Japan
- <P-35> **Effect of Fe₂O₃ Additive on Space Charge Accumulation in Low-Density Polyethylene**
 °Ryotaro Ozaki¹, Yuto Nagataki¹, Taichi Yano¹, Shinya Itoh¹, Shinji Yodate¹, Kazunori Kadowaki¹
¹Graduate School of Science and Engineering, Ehime University, Japan
- <P-36> **Preparation of Release Films by Ion-Assisted Deposition Method**
 °Hirokazu Yano¹, Hiroaki Usui²
¹Lintec Corporation, Japan,
²Tokyo University of Agriculture and Technology, Japan
- <P-37> **Fabrication of Multilayered Structure of Organic/Hybrid Polymer Thin Films**
 °Takumi Miyayama¹, Hiroaki Usui¹
¹Institute of Engineering, Tokyo University of Agriculture and Technology, Japan
- <P-38>* **Vapor Deposition of p-Hexadecylstyrene by Ion- and Electron-Assisted Methods**
 °Aoba Sasaki¹, Atsushi Ohyama¹, Hiroaki Usui¹, Yuto Kitazawa², Satoshi Usui²
¹Institute of Engineering, Tokyo University of Agriculture and Technology, Japan
²Graduate School of Science and Technology, Niigata University, Japan
- <P-39> **Synthesis and Polymerization of Diacetylene Derivatives with Acceptor Unit**
 °Ryoko Arai¹, Kazuki Saito¹, Yoko Tatewaki¹, Sadafumi Nishihara², Shuji Okada³
¹Division of Applied Chemistry, Graduate School of Engineering, Tokyo University of Agriculture and Technology, Japan
²Department of Chemistry, Graduate School of Science, Hiroshima University, Japan
³Department of Organic Device Engineering, Graduate School of Science and Engineering, Yamagata University, Japan
- <P-40>* **Optical properties of phenyl-cored thiophene dendrimer with multiple π -conjugations**
 °Mizuho Yamagishi¹, Shohei Horike^{1,2,3}, Yasuko Koshiba^{1,2}, Atsunori Mori¹, Kenji Ishida^{1,2}
¹Department of Chemical Science and Engineering, Graduate School of Engineering, Kobe University, Japan
²Reserch Center for Membrane and Film Technology, Kobe University, Japan
³PRESTO, Japan Science and Technology Agency, Japan
- <P-41>* **Reverse piezoelectric response of P(VDF/TrFE) thin films for medical micropump**
 °Keigo Shikata¹, Shohei Horike^{1,2,3}, Yasuko Koshiba^{1,2}, Kenji Ishida¹
¹Department of Chemical Science and Engineering, Graduate school of Engineering, Kobe University, Japan
²Reserch Center for Membrane and Film Technology, Kobe University, Japan
³PRESTO, Japan Science and Technology Agency, Japan
- <P-42>* **Preparation and Optical properties of Polynanocrystal Structures Composed of 10, 12-nonacosadiynoic Acid**
 °Kohei Hattori¹, Yoko Tatewaki¹, Sadafumi Nishihara^{2,3}, Shuji Okada⁴
¹Tokyo University of Agriculture and Technology, Japan
²Hiroshima University, Japan
³JST PRESTO, Japan
⁴Yamagata University, Japan
- <P-43> **Molecular Dynamics Simulation Analysis of Intermolecular Phonons:Relation with Crystallinity of Poly (ether ether ketone) (PEEK)**
 °Toshihiro Shimada¹, Xiaoran Yang², Seiya Yokokura¹, Taro Nagahama¹, Makoto Yamaguchi³
¹Division of Applied Chemistry, Faculty of Engineering, Hokkaido University, Japan
²Graduate School of Chemical Science and Engineering, Hokkaido University, Japan
³Department of Systems Design Engineering, Akita University, Japan

- <P-44>* **Structural analysis of SAM membranes having amino group with various alkyl chains by XPS**
 °Yuta Takaoka¹, Hiroaki Omori¹, Hiroyuki Sakaue¹, Hitoshi Suzuki¹
¹Hiroshima University, Japan
- <P-45>* **Mesh structures formed by tetrabromobiphenyl molecules on Au(111) and Cu(111) surfaces**
 °Kaito Matsuguchi¹, Shuto Shingae¹, Hiroyuki Sakaue¹, Hitoshi Suzuki¹, Yukihiro Tominari², Sukichi Tanaka²
¹Hiroshima University, Japan
²National Institute of Information and Communications Technology, Japan
- <P-46> **Quantum coherent transport at room temperature in a single molecular junction**
 °Biswajit Pabi¹, Štěpán Marek², Adwitiya Pal³, Puja Kumari⁴, Soumya jyoti Ray⁴, Arunabha Thakur³, Richard Korytár², Atindra Nath Pal¹
¹Department of Condensed Matter Physics and Material Sciences, S. N. Bose National Centre for Basic Science, India
²Department of Condensed Matter Physics, Faculty of Mathematics and Physics, Charles University, Czech Republic
³Department of Chemistry, Jadavpur University, India
⁴Department of Physics, Indian Institute of Technology Patna, India
- <P-47> **Vertical Quantum-Effect Transistors with Molecular Dots**
 °Ryoma Hayakawa¹, Tuhin Shuvra Basu¹, Yutaka Wakayama¹
¹International Center for Materials Nanoarchitectonics (WPI-MANA), National Institute for Materials Science (NIMS), Japan
- <P-48> **Epitaxial Growth of PZT Thin Film and Application of EO Waveguide Modulator**
 °Futa Uemura¹, Shiyoshi Yokoyama¹
¹Kyushu University, Japan
- <P-49> **Integrated Waveguide Circuit of Light Modulation and Picking for Trapped Ion Quantum Computers on Photonic-chip**
 °Rintaro Tajima¹, Shiyoshi Yokoyama¹
¹Kyushu University, Japan
- <P-50> **Evaluation of optical characteristics in electro-optic chromophores designed for applications at O-band**
 °Toshiki Yamada¹, Isao Aoki¹, Chiyumi Yamada¹, Akira Otomo¹
¹Advanced ICT Research Institute, National Institute of Information & Communications Technology, Japan
- <P-51> **Thin film passivation of organic electro-optic polymer by atomic layer deposition**
 °Yukihiro Tominari¹, Toshiki Yamada¹, Takahiro Kaji¹, Akira Otomo¹
¹Advanced ICT Research Institute, National Institute of Information and Communications Technology (NICT), Japan
- <P-52> **Si/EO polymer hybrid optical modulators for O-band datacom applications**
 Hideo Yokohama¹, Isao Aoki¹, Chiyumi Yamada¹, Toshiki Yamada¹, °Akira Otomo¹, Masato Tanaka², Manabu Shiozaki², Hidehisa Tazawa², Yasunori Murakami², Rai Kou³, Guangwei Cong³, Morifumi Ohno³, Yuriko Maegami³, Haruhiko Kuwatsuka³, Koji Yamada³
¹Advanced ICT Research Institute, National Institute of Information & Communications Technology, Japan
²Transmission Devices Laboratory, Sumitomo Electric Industries, Ltd, Japan
³Platform Photonics Research Center, National Institute of Advanced Industrial Science and Technology, Japan
- <P-53>* **All Solid Near Infrared Light Induced Self Written Optical Waveguides and Optical Interconnection**
 °Haruki Otaka¹, Tomomi Ota¹, Hidetaka Terasawa¹, Keisuke Kondo¹, Okihiko Sugihara¹, Yasunari Kawasaki²
¹Utsunomiya University, Japan
²NTT Advanced Technology, Japan
- <P-54>* **Role of Solvent Blending in the Preparation of Semiconducting Polymer Films Using Unidirectional Floating Film Transfer Method**
 °Jumpei Toyoda¹, Rishabh Vashist¹, Manish Pandey¹, Yongyoon Cho¹, Hiroaki Bente¹, Masakazu Nakamura¹, Shyam S. Pandey²
¹Nara Institute of Science and Technology, Japan
²Graduate School of LSSE, Kyushu Institute of Technology, Japan

- <P-55>* **Influence of Thin Film Crystallinity and Molecular Orientation on Charge Carrier Transport in Organic Field Effect Transistors**
^oKumar Vivek Gaurav¹, Harshita Rai¹, Shuichi Nagamatsu², Shyam S. Pandey¹
¹Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology, Japan
²Department of Computer Science and Electronics, Kyushu Institute of Technology, Japan
- <P-56> **Clarifying the Role of Viscosity in Controlling the Extent and Direction of Orientation in Donor-Acceptor type Conjugated Polymers**
^oShubham Sharma¹, Shyam S. Pandey¹
¹Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology, Japan
- <P-57> **Early stage growth process of dinaphtho[2, 3-b:2', 3'-f]thieno[3, 2-b]thiophene (DNTT) thin film by slow deposition method**
^oNobuya Hiroshiba¹, Yuta Kawano¹, Richard Ongko¹, Kazuto Koike¹, Ryosuke Matsubara², Atsushi Kubono², Hiroataka Kojima³
¹Nanomaterials Microdevices Research Center, Graduate School of Engineering, Osaka Institute of Technology, Japan
²Graduate School of Integrated Science and Technology, Shizuoka University, Japan
³National Institute of Technology (KOSEN), Maizuru College, Japan
- <P-58> **Fabrication of vertical separated multilayers of S-DNTT-10/polystyrene ultra-thin films on anodic oxidized HfO₂ for low-temperature processed high-performance OFETs**
^oBojun Chen¹, Eiji Itoh¹
¹Department of Electrical and Computer Engineering, Shinshu University, Japan
- <P-59>* **Optoelectronic Artificial Synapse Device Based on Organic Floating-Gate Memory**
^oKazuyoshi Morikawa¹, Takashi Nagase^{1,2}, Kazuki Nakagawa¹, Naoyuki Nishida¹, Takashi Kobayashi^{1,2}, Hiroyoshi Naito^{2,3}
¹Department of Physics and Electronics, Osaka Metropolitan University, Japan
²The Research Institute for Molecular Electronic Devices (RIMED), Osaka Metropolitan University, Japan
³Department of Applied Chemistry, Osaka Metropolitan University, Japan
- <P-60> **High performance and stable self-powered perovskite nanowires photodetectors enabled by multi-functional conjugated polymer interfacial layer**
^oChih-Yu Chang¹
¹Department of Materials Science and Engineering, National Taiwan University of Science and Technology, Taiwan
- <P-61> **Hexamethyldisilazane/Argon Cyclonic Plasma Synthesized Organic-Inorganic Hybrid Nano Film for Flexible Display Panel Polymeric Substrate**
^oChun Huang¹, Fang-Yi Chung¹
¹Department of Chemical Engineering & Materials Science, Yuan Ze University, Taiwan
- <P-62> **AgBiS₂ Nanocrystal / ZnO Nanowire Heterojunction Solar Cells with Enhanced Carrier Collection Efficiency**
Yun Xiao¹, Haibin Wang², Fumiyasu Awai², ^oTakaya Kubo¹, Hiroshi Segawa^{1,2}
¹Research Center for Advanced Science and Technology, The University of Tokyo, Japan
²Graduate School Arts & Sciences, The University of Tokyo, Japan
- <P-63>* **Optical Properties of Green Emissive InP-based Quantum Dots with Different Intermediate Shell Thicknesses and Their Application to Hybrid Light-Emitting Diodes**
^oMaowei Huang¹, Hirotake Kajii¹, Shinsei Yamada¹, Akihito Okamoto¹, Haruki Bai¹, Shintaro Toda², Masahiko Kondow¹
¹Osaka University, Japan
²ULVAC-Osaka Univ. Joint Research Laboratory for Future Technology, Japan
- <P-64> **Development of quercetin-loaded liposome-based gold nanoparticles for drug delivery applications**
^oJiyoung Lee¹, Jongsung Kim¹
¹Department of Chemical and Biological Engineering, Gachon University, South Korea
- <P-65>* **Synthesis of Mxene nanoflakes for organic electronic applications**
^oRadhe Shyam¹, Subhajit Jana¹, Rajiv Prakash¹
¹School of Materials Science and Technology, Indian Institute of Technology (BHU), Varanasi, India

- <P-66> **Phase-Field Modelling of Electrical Tree Propagation in Polymer with Various Filler Distribution**
 °Shinji Yudate¹, Tomoya Tachibana¹, Kazuki Oshimo¹, Ryotaro Ozaki¹, Kazunori Kadowaki¹
¹Graduate School of Science and Engineering, Ehime University, Japan
- <P-67> **Chiral sensing of chiral organic-inorganic perovskite under circularly polarized light**
 °Shiyan Shang¹, Feng Wei¹, Dai Taguchi¹, Takaaki Manaka¹
¹Tokyo Institute of Technology, Japan
- <P-68>* **Evaluation on Chirality Temperature Dependence of Hybrid Perovskites thin film**
 °Feng Wei¹, Dai Taguchi¹, Takaaki Manaka¹
¹Tokyo Institute of Technology, Japan
- <P-69>* **ESR study on charge states and device degradation mechanisms in PEA containing tin perovskite solar cells**
 °Atsushi Sato¹, Seira Yamaguchi¹, Mayu Motohashi¹, Yihuang Wang¹, Kazuhiro Marumoto¹, Tomoya Nakamura², Atsushi Wakamiya²
¹Faculty of Pure and Appl. Sci., Univ. of Tsukuba; TREMS, Univ. of Tsukuba, Japan
²Inst. for Chem. Res., Kyoto Univ., Japan
- <P-70>* **CH₃NH₃PbI₃-Based Solar Cells Fabricated by Bar Coating Process**
 °Tomoki Saito¹, Genya Uzurano¹, Nao Kuwahara¹, Kentaro Abe¹, Shogo Miyake¹, Akihiko Fujii¹, Masanori Ozaki¹
¹Division of Electrical, Electronic and Infocommunications Engineering, Graduate School of Engineering, Osaka University, Japan
- <P-71>* **Effect of coating process on the electrical and optical properties of Silver Nanowire based electrodes**
 °Tejswini Kishor Lahane¹, Jitesh Agrawal¹, Vipul Singh¹
¹Molecular and Nanoelectronics Research Group (MNRG), Department of Electrical Engineering, IIT Indore, India
- <P-72> **Oxide Based Heterojunction for Modern Optoelectronic Applications**
 Arige Sumanth¹, M. S. Ramachandra Rao², °Tejendra Dixit¹
¹Optoelectronics and Quantum Devices Group, Indian Institute of Information Technology Design and Manufacturing Kancheepuram, India.
²Department of Physics, Quantum Centre for Diamond and Emergent Materials (QuCenDiEM), Nano Functional Materials Technology Centre (NFMTC) and Materials Science Research Centre (MSRC) - Building, Indian Institute of Technology Madras, India
- <P-73>* **Investigations on the effect of Laser Texturing of Kapton Polyimide on the Piezoelectric response of ZnO based Nanogenerators**
 N. H. Purabiarao¹, °V. Singh¹, I. A. Palani²
¹Molecular and Nanoelectronics Research Group (MNRG), Department of Electrical Engineering, Indian Institute of Technology, Indore, India
²Mechatronics and Instrumentation Lab, Department of Mechanical Engineering, Indian Institute of Technology, Indore, India
- <P-74>* **Particle Dynamics Study in Laser Micro 3D Printing for Sensors Fabrication**
 Anshu Sahu¹, °Vipul Singh², I A Palani¹
¹Mechatronics and Instrumentation Lab, Discipline of Mechanical Engineering, Indian Institute of Technology Indore, India
²Molecular and Nanoelectronics Research Group, Discipline of Electrical Engineering, Indian Institute of Technology Indore, India
- <P-75>* **Smartphone based non-invasive glucose monitoring in diabetic patients utilizing enhanced chemiluminescence imaging technique**
 °Nupur kumari¹, Priya singh¹, Narsingh raw Nirala¹, Rajiv Prakash¹
¹School of Materials Science and Technology, Indian Institute of Technology (Banaras Hindu University), Varanasi, India
- <P-76>* **Fluorescence Detection of Elastase Enzyme by Novel Peptide Squaraine Dye Conjugate**
 °Sai Kiran Mavileti¹, Tetsuya Narimatsu¹, Shekhar Gupta¹, Tamaki Kato¹, Shyam S. Pandey¹
¹Graduate School of Life Science and System Engineering, Kyushu Institute of Technology, Japan

- <P-77> **Design & Synthesis of FITC-Flanked Novel Squaraine Dye and its Interaction with Bovine Serum Albumin as a Model Protein**
 °Shekhar Gupta¹, Yuuki Yamawaki¹, Safalmani Pradhan¹, Shyam S. Pandey¹, Tamaki Kato¹
¹Graduate School of Life Science and System Engineering, Kyushu Institute of Technology, Japan
- <P-78>* **Bioinspired magnetic iron oxide nanoparticles from *Argyrea nervosa* leaf extract for efficient electrochemical determination of carbofuran pesticide: a sustainable approach**
 °Kshitij RB Singh¹, Shyam S Pandey¹
¹Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology, Japan
- <P-79>* **Novel strategy for designing NIR fluorescence ON probe for wide range dynamic pH sensing via acid induced oligomerization**
 °Linjun Tang¹, Shyam S. Pandey¹
¹Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology, Japan
- <P-80>* **Characterization of electrochemical performance of polyaniline-polyvinyl acetate films used as pH sensor**
 °QI KANG¹, Hiroaki Takehara^{1,2}, Takanori Ichiki^{1,2}
¹Department of Materials Engineering, the University of Tokyo, Japan
²Innovation Center of NanoMedicine (iCONM), Japan
- <P-81>* **Fabrication of Dual-mode Miniature Surface Plasmon Resonance Sensor Chip Using a Grating-polymeric Prism**
 °Wisansaya Jaikeandee¹, Chutiparn Lertvachirapaiboon¹, Kazunari Shinbo¹, Keizo Kato¹, Akira Baba¹, Supeera Nootchanat², Sanong Ekgasit²
¹Graduate School of Science and Technology and Faculty of Engineering, Niigata University, Japan
²Sensor Research Unit (SRU), Department of Chemistry, Faculty of Science, Chulalongkorn University, Thailand
- <P-82>* **A Graphene Oxide-Modified Extended-Gate-Type Organic Transistor for Glucose Detection in a Human Blood Sample**
 °Haonan Fan¹, Qi Zhou¹, Yui Sasaki¹, Tsuyoshi Minami¹, Yuta Nishina^{2,3}
¹Institute of Industrial Science, The University of Tokyo, Japan
²Research Core for Interdisciplinary Sciences, Okayama University, Japan
³Graduate School of Natural Science and Technology, Okayama University, Japan
- <P-83>* **Sensing of Nitrate Ions Using Graphene-Extended Gate Field-Effect Transistor**
 °Koki Kato¹, Kento Mimura¹, Masato Nishiwaki², Takayuki Hasegawa¹, Nobuya Hiroshiba¹, Kazuto Koike¹, Toshihiko Maemoto¹, Akira Fujimoto¹
¹Graduate Course in Electrical, Electronic and Mechanical Engineering, Nanomaterials Microdevices Research Center, Osaka Institute of Technology, Japan
²Division of Human Sciences, Faculty of Engineering, Osaka Institute of Technology, Japan
- <P-84> **Properties of Microwells Sealed with Lipid Bilayers: Effects of Surface Materials**
 °Yoshiaki Kashimura¹, Masumi Yamaguchi¹
¹NTT Basic Research Laboratories and Bio-Medical Informatics Research Center, NTT Corporation, Japan
- <P-85> **Development of EIS biosensors for rapid cortisol determination in saliva**
 °Keitaro Mori¹, Takayuki Shibata¹, Hitoshi Ohnuki¹, Haiyun Wu², Hideaki Endo², Daijyu Tsuya³, Yuki Maruyama⁴
¹Division of Marine Technology, Tokyo University of Marine Science and Technology, Japan
²Division of Marine Science, Tokyo University of Marine Science and Technology, Japan
³National Institute for Materials Science, Japan
⁴Research and Development Division, Lion Corporation, Japan
- <P-86>* **Co-assembly of fibroin like peptides on graphite surface for potential biosensing**
 °Shun Shimizu¹, Chishu Homma¹, Yuhei Hayamizu¹
¹Department of Materials Science and Engineering, School of Materials and Chemical Technology, Tokyo Institute of Technology, Japan

December 13 (Tuesday)

- 9:15-17:00 **Registration**
- 9:30-10:10 **Plenary Lecture 2** Chair : Naoki Matsuda (AIST)
- 9:30-10:10 <PL-2> **Engineering nano-bio-interfaces for biosensing and neuro-electronics**
^oAndreas Offenhäusser¹, Pegah Shokooimehr¹, Gabriela Figueroa Miranda¹, Dirk Mayer¹
¹Institute of Biological Information Processing-Bioelectronics, Forschungszentrum Jülich, Germany
- 10:10-10:20 **Break**
- 10:20-11:30 **Session 4 : Bioelectronics** Chair : Akira Baba (Niigata University)
- 10:20-10:45 <S4-I-1> **High spatiotemporal resolution live cell imaging on a plasmonic metasurface**
(Inited) ^oKaoru Tamada¹
¹Institute for Materials Chemistry and Engineering (IMCE), Kyushu University, Japan
- 10:45-11:00 <S4-O-1> **Surfactant-free gold nano-particle dispersed aqueous solution for surface-enhanced Raman scattering spectroscopy**
^oNaoki Matsuda¹, Hirotaka Okabe
¹Sensing System Research Center, National Institute of Advanced Industrial Science and Technology, Japan
- 11:00-11:15 <S4-O-2>* **A label free disposable immunosensor based on simple architecture with self-assembled monolayers for novel cancer biomarker sensing**
^oAmit K. Yadav¹, Payal Gulati¹, Pratima R. Solanki¹, Rinu Sharma², Alok Thakkar³
¹Nano-Bio Laboratory, Special Centre for Nanoscience, Jawaharlal Nehru University, India
²Guru Gobind Singh Indraprastha University, India
³Otolaryngology & Head Neck Surgery, All India Institute of Medical Sciences, India
- 11:15-11:30 <S4-O-3> **Strategies for signal amplification in electrochemical immunosensors for clinical diagnoses**
Siriporn Anuthum^{1,2}, Patrawadee Yaiwong^{1,2}, Supakeit Chanarsa^{1,2}, Natthawat Semakul¹, Jaroon Jakmunee^{1,3}, ^oKontad Ounnunkad^{1,3}
¹Department of Chemistry and Center of Excellence for Innovation in Chemistry, Faculty of Science, Chiang Mai University, Thailand
²The Graduate School, Chiang Mai University, Thailand
³Research Center on Chemistry for Development of Health Promoting Products from Northern Resources, Chiang Mai University, Thailand
- 11:30-11:50 **Break**
- 11:50-12:40 **Session 5 : AI and materials informatics** Chair : Takashi Nagase (Osaka Metropolitan University)
- 11:50-12:15 <S5-I-1> **Experiments- and machine learning-driven approach to the development of organic photovoltaics**
(Inited) ^oAkinori Saeki¹
¹Department of Applied Chemistry, Graduate School of Engineering, Osaka University, Japan
- 12:15-12:40 <S5-I-2> **Pattern recognition-driven chemical sensing based on an organic transistor**
(Inited) ^oTsuyoshi Minami¹
¹Institute of Industrial Science, The University of Tokyo, Japan

12:40-14:00	Lunch	
14:00-14:30	Keynote Presentation 2	Chair : Hiroaki Usui (Tokyo University of Agriculture and Technology)
14:00-14:30	<KN-2>	Carrier generation in high-mobility organic semiconductors ^o Masahiro Hiramoto ¹ ¹ Institute for Molecular Science, Japan
14:30-14:40	Break	
14:40-16:30	Session 6 : Fabrication and characterization of organic and molecular devices II	Chair : Shyam S. Pandey (Kyushu Institute of Technology) Co-chair : Takahiro Kaji (NICT)
14:40-15:05	<S6-I-1> (Invited)	Charge separation with small energy offset at donor:acceptor interface ^o Yasunari Tamai ¹ ¹ Department of Polymer Chemistry, Graduate School of Engineering, Kyoto University, Japan
15:05-15:30	<S6-I-2> (Invited)	Photo- and electrically-excited upconversion emission using organic semiconductor interface ^o Seiichiro Izawa ¹ ¹ Institute for Molecular Science, Japan
15:30-15:45	<S6-O-1>*	Comparative investigation of plasmonic P3HT:PC61BM based solar cells with aluminum grating and embeded gold nanoparticulates ^o Joseph Baki Kaore ¹ , Akira Baba ¹ , Kazunari Shinbo ¹ , Keizo Kato ¹ ¹ Graduate School of Science and Technology, Niigata University, Japan
15:45-16:00	<S6-O-2>*	Gold nanocomposite film enhanced photoelectrochemical non-enzymatic glucose sensor ^o Sopit Phetsang ¹ , Naoto Okuuchi ² , Chutiparn Lertvachirapaiboon ² , Kazunari Shinbo ² , Keizo Kato ² , and Akira Baba ² ¹ Division of General Education, National Institute of Technology, Nagaoka College, Japan ² Graduate School of Science and Technology, Niigata University, Japan
16:00-16:15	<S6-O-3>	ESR study of charge-accumulation states and molecular orientation in polymer solar-cell materials using organic electrochemical transistor structures ^o Jiayi Wang ^{1,2} , Seira Yamaguchi ^{1,2} , Dong Xue ^{1,2} , Satoshi Inai ^{1,2} , Kazuhiro Marumoto ^{1,2} , Masahiko Saito ³ , Itaru Osaka ³ ¹ University of Tsukuba, Japan ² TREMS, University of Tsukuba, Japan ³ Hiroshima University, Japan
16:15-16:35	Break	
16:35-18:25	Session 7 : Organic-Inorganic hybrid material and applications	Chair : Toshihiro Shimada (Hokkaido University) Co-chair : Takaaki Manaka (Tokyo Institute of Technology)
16:35-17:00	<S7-I-1> (Invited)	Phase/structure-engineered two-dimensional layered materials for innovative nanoelectronics ^o Yu-Lun Chueh ¹ ¹ Department of Materials Science and Engineering, National Tsing-Hua University, Taiwan
17:00-17:25	<S7-I-2> (Invited)	Novel photo-functional materials and devices based on organic-inorganic hybrid structures ^o Ayumi Ishii ¹ ¹ Faculty of Life and Environmental Sciences, Teikyo University of Science, Japan

- 17:25-17:40 <S7-O-1> **CO₂ generation from carbohydrates fuel cells**
^oKeiichi Kaneto¹, Sadahito Uto¹
¹Department of Biomedical Engineering, Osaka Institute of Technology, Japan
- 17:40-17:55 <S7-O-2> **Fabrication of high response ZnO thin film-based carbon monoxide gas sensors**
 Jitesh Agrawal¹, Mayoorika Shukla¹, Tejaswini Kishor Lahane¹, ^oVipul Singh¹
¹Molecular and Nanoelectronics Research Group (MNRG), Department of Electrical Engineering, Indian Institute of Technology Indore, India
- 17:55-18:10 <S7-O-3> * **Shift current generation along off-polar axis in organic-inorganic hybrid perovskites**
^oTaishi Noma¹, Fumito Araoka¹, Daigo Miyajima¹
¹RIKEN Center for Emergent Matter Science (CEMS), Japan
- 18:10-18:25 <S7-O-4> * **Investigation of charge transfer mechanism of RP tin-based perovskite solar cells with BA⁺ and PEA⁺ using operando ESR method**
^oYizhou Chen^{1,2}, Seira Yamaguchi^{1,2}, Atsushi Sato^{1,2}, Dong Xue^{1,2}, Kazuhiro Marumoto¹
¹University of Tsukuba, Japan
²TREMS, University of Tsukuba, Japan

December 14 (Wednesday)

- 9:15-12:00 **Registration**
- 9:30-10:10 **Plenary Lecture 3**
 Chair : Takeshi Fukuda (Sekisui Chemical)
- 9:30-10:10 <PL-3> **Towards sustainable intelligent materials and systems**
 °Benjamin C.K. Tee¹
¹College of Design and Engineering, National University of Singapore, Singapore
- 10:10-10:20 **Break**
- 10:20-11:40 **Session 8 : Haptic, wearable, flexible devices and applications**
 Chair : Dai Taguchi (Tokyo Institute of Technology)
- 10:20-10:45 <S8-I-1> **Next-generation wearable devices by intrinsically stretchable polymer materials**
 (Invited) °Naoji Matsuhisa¹
¹Institute of Industrial Science, The University of Tokyo, Japan
- 10:45-11:10 <S8-I-2> **Flexible human sensory and extra-sensory interactive sensing displays**
 (Invited) °Cheolmin Park¹
¹Yonsei University, Korea
- 11:10-11:25 <S8-O-1>* **An ultrathin and stretchable electrochromic display with exceptional skin conformability**
 °Taizo Tominaga¹, Tokihiko Shimura¹, Naoji Matsuhisa¹, Minoru Ashizawa²
¹Institute of Industrial Science, The University of Tokyo, Japan
²Materials Science and Engineering, Tokyo Institute of Technology, Japan
- 11:25-11:40 <S8-O-2>* **Two-dimensional Mo_xW_{1-x}S₂ alloys for nanogenerators producing record piezo-output and coupled photodetectors for self-powered UV sensor**
 °Didhiti Bhattacharya¹, Shubhrasish Mukherjee¹, Atindra Nath Pal¹, Rajib Kumar Mitra¹, Samit Kumar Ray^{1,2}
¹S. N. Bose National Center for Basic Science, India
²Indian Institute of Technology Kharagpur, India
- 11:40-13:00 **Break**
- 13:00-13:50 **Session 9 : Organic semiconductor materials and devices III**
 Chair : Kazuhiro Marumoto (University of Tsukuba)
- 13:00-13:25 <S9-I-1> **Dual-band organic photodetectors**
 (Invited) °Furong Zhu¹
¹Department of Physics, Hong Kong Baptist University, China
- 13:25-13:50 <S9-I-2> **Oriented semiconducting polymers and polymer composite films for sensor devices**
 (Invited) °Rajiv Prakash¹, Subhajit Jana¹
¹School of Materials Science and Technology, Indian Institute of Technology Varanasi, India
- 13:50-14:10 **Closing remarks (Award ceremony)**