

# EM-NANO 2017 Program

**Monday, June 19**

## OPENING REMARKS (Main Hall)

09:00 Conference Chair

## PLENARY SESSION 1 (Main Hall)

09:15 **PL1-1 Fiber Optic Nerve Systems for Structural Health Monitoring**, Kazuo Hotate (Toyota Technological Institute, Japan)

10:00 **PL1-2 Recent Progress in Inorganic Electro-Active Materials**, Hideo Hosono (Tokyo Institute of Technology, Japan)

## Break

## PLENARY SESSION 2 (Main Hall)

11:15 **PL2-1 3D Local Structure Science of Active-site by Atomic-Resolution Stereography and Holography**, Hiroshi Daimon (Nara Institute of Science and Technology, Japan)

## FOCUS SESSION 1 (Main Hall)

**Chairperson :** Mutsumi Kimura (Ryukoku University, Japan)

13:15 **F1-1 Organic Electrochemical Transistors as Bio-Sensors from Physics and Chemistry to Model Design**, Yvan Bonnassieux, Anna Shirinskaya, Gilles Horowitz (LPICM, CNRS, Ecole Polytechnique, France)

13:45 **F1-2 Contact Effects in Organic Thin Film Transistors: Device Physics and Modeling**, Guglielmo Fortunato, Matteo Rapisarda, Antonio Valletta, Luigi Mariucci (Consiglio Nazionale delle Ricerche - Institute for Microelectronics and Microsystems, Italy)

14:15 **F1-3 A Route toward Less-Lead or Lead-Free Perovskite Solar Cells**, Meng Li, Zhao-Kui Wang, Liang-Sheng Liao (Soochow University, China )

14:45 **F1-4 PL Decay Imaging for Probing Carrier Behavior in Luminescence Polymer Thin Films**, Takaaki Manaka, Mitsumasa Iwamoto (Tokyo Institute of Technology, Japan)

## Break

## FOCUS SESSION 2 (Main Hall)

**Chairperson :** Koichi Maezawa (University of Toyama, Japan)

15:45 **F2-1 Renovation of Power Semiconductor Technology - From Silicon to Wide Bandgap Devices**, Daisuke Ueda (Kyoto Institute of Technology, Japan)

16:15 **F2-2 High Performance III-V Nanowire Transistors**, Erik Lind (Lund University, Sweden)

16:45 **F2-3 Femtosecond Slow-Motion of a Molecular Orbital in a Single Vibrating Molecule**, Dominik Peller, Tyler L. Cocker, Ping Yu, Jascha Repp, Rupert Huber (University of Regensburg, Germany)

17:15 **F2-4 Nanodiagnosis Platform Technology: Toward In-body Hospital**, Takanori Ichiki<sup>1,2</sup>  
(invited) (<sup>1</sup>University of Tokyo, Japan, <sup>2</sup>Kawasaki Institute of Industry Promotion, Japan)

## Break

## POSTER SESSION 1 (18:00 - 19:30)

Tuesday, June 20, 2017

**FOCUS SESSION 3 (Main Hall)**

**Chairperson :** Susumu Horita (Japan Advanced Institute of Science and Technology, Japan)

- 09:00 **F3-1 Ultimate Electronics with Control of Single Electrons**, Akira Fujiwara, Katsuhiko Nishiguchi, (invited) Gento Yamahata, Kensaku Chida (NTT Basic Research Laboratories, Japan)
- 09:30 **F3-2 Research Development on Device Fabrication Processes of Atomically Thin 2D Functional Films for Ubiquitous Sensing**, Atsushi Ando (National Institute of Advanced Industrial Science and Technology, Japan)
- 10:00 **F3-3 Computational Nano-Materials Design and Realization: Defect and Impurity Control**, (invited) Hiroshi Katayama-Yoshida<sup>1</sup>, Tetsuya Fukushima<sup>2</sup>, Kazunori Sato<sup>2</sup>, (<sup>1</sup>University of Tokyo, Japan, <sup>2</sup>Osaka University, Japan)

**Break**

**FOCUS SESSION 4 (Main Hall)**

**Chairperson :** Atsushi Matsuda (National Institute of Advanced Industrial Science and Technology, Japan)

- 11:00 **F4-1 Assessing the Limits and Possibility of Solar Cells**, Pabitra K. Nayak (invited) (University of Oxford, UK)
- 11:30 **F4-2 Solution-Processed Organic-Inorganic Perovskite Thin-Film Transistors with High Hole and Electron Mobilities**, Toshinori Matsushima<sup>1,2</sup>, Atula S. D. Sandayaka<sup>1,2</sup>, Chuanjiang Qin<sup>1,2</sup>, Takashi Fujiwara<sup>3</sup>, Chihaya Adachi<sup>1,2</sup> (<sup>1</sup>Kyushu University, Japan, <sup>2</sup>JST, ERATO, Adachi Molecular Exciton Engineering Project, Japan, <sup>3</sup>ISIT, Japan)
- 12:00 **F4-3 Ferroelectric Photovoltaics Delivering Abnormally High Photovoltages**, Yuji Noguchi<sup>1</sup>, (invited) Ryotaro Inoue<sup>2</sup>, Yuuki Kitanaka<sup>1</sup>, Masaru Miyayama<sup>1</sup> (<sup>1</sup>University of Tokyo, Japan, <sup>2</sup>Nihon University, Japan)

**POSTER SESSION 2 (12:30- 14:00)**

**Break**

**PARALLEL SESSION 1**

**PA1-1 : Organic Materials & Devices**

**Chairperson :** Hiroyuki Okada (University of Toyama, Japan)

- 14:10 **PA1-1-1 Fundamental Technology for Application of Organic Transistors to High Frequency** (invited) **Organic Transistors to High Frequency Operating Circuits**, Masatoshi Kitamura (Kobe University, Japan)
- 14:40 **PA1-1-2 Remaining Challenges in Organic Light-Emitting Diodes for Practical Use: Operational Lifetime and Color Purity**, Hirohiko Fukagawa (NHK, Japan)
- 15:10 **PA1-1-3 Top-Gate Pentacene-Based OFET with  $\alpha$ -Rubrene Gate Insulator**, Mizuha Hiroki, Yasutaka Maeda, Shun-ichiro Ohmi (Tokyo Institute of Technology, Japan)
- 15:30 **PA1-1-4 Short-Circuit Current Enhancement in Photovoltaic-Based Organophosphate Pesticide Chlorpyrifos Sensor Using Surface Plasmon Resonance Effect**, Treenet Thepudom<sup>1,2</sup>, Chutiparn Lertvachirapaiboon<sup>1</sup>, Kazunari Shinbo<sup>1</sup>, Keizo Kato<sup>1</sup>, Futao Kaneko<sup>1</sup>, Teerakiat Kerdcharoen<sup>2</sup>, Akira Baba<sup>1</sup> (<sup>1</sup>Niigata University, Japan, <sup>2</sup>Mahidol University, Thailand)
- 15:50 **PA1-1-5 Electronic Structures of bis(1,2,5-thiadiazolo)-p-quinobis(1,3-dithiole) (BTQBT) and Electrode Interface Measuring by Photoelectron Spectroscopy**, N. Ohashi, S. Kobayashi, M. Hikasa, Y. Nakayama, Y. Watanabe (Tokyo University of Science, Japan)

**PA1-2 : Inorganic, Ferroelectric & Oxide materials**

**Chairperson :** Hironori Fujisawa (University of Hyogo, Japan)

- 14:10 **PA1-2-1 Functional Properties of Ferroelectric Polymer and its Device Application**, (invited) Takashi Nakajima<sup>1,2</sup> (<sup>1</sup>Tokyo University of Science, Japan, <sup>2</sup>PRESTO, JST, Japan)

- 14:40 **PA1-2-2 A Novel Power Device Materials of Corundum-Structured  $\alpha$ -Ga<sub>2</sub>O<sub>3</sub> Generated by MIST**  
(invited) **EPITAXY Technique**, Kaneko Kentaro<sup>1,2</sup>, Shizuo Fujita<sup>1</sup>, Toshimi Hitora<sup>2</sup> (<sup>1</sup>Kyoto University, Japan, <sup>2</sup>FLOSFA, Japan)
- 15:10 **PA1-2-3 Diamond Epitaxy for High Power and High Temperature Electronics**, Franz A. Koeck<sup>1</sup>,  
(invited) Maitreya Dutta<sup>1,2</sup>, Raghuraj Hathwar<sup>1</sup>, Mehdi Saremi<sup>1</sup>, Xingye Wang<sup>1</sup>, Brianna Eller<sup>1</sup>,  
Manpuneet Kaur Benipal<sup>1</sup>, Srabanti Chowdhury<sup>1,2</sup>, Stephen M. Goodnick<sup>1</sup>, Robert J. Nemanich<sup>1</sup>  
(<sup>1</sup>Arizona State University, USA, <sup>2</sup>University of California - Davis, USA)
- 15:40 **PA1-2-4 Optimized Ascorbic Acid Fuel Cells with Graphene-coated Carbon Fiber Cloth**,  
Toshinari Doi<sup>1</sup>, Kazuki Hoshi<sup>1</sup>, Kazuo Muramatsu<sup>2</sup>, Hisato Sumi<sup>2</sup>, Yasuhiro Nishioka<sup>1</sup>,  
Satomitsu Imai<sup>1</sup> (<sup>1</sup>Nihon University, Japan, <sup>2</sup>Incubation Alliance Inc., Japan)

### PA1-3 : Photovoltaics I (Inorganic)

**Chairperson :** Atsushi Matsuda (National Institute of Advanced Industrial Science and Technology, Japan)

- 14:10 **PA1-3-1 Oxide Semiconductor Thin Films for Solar Cell Applications**, Toshihiro Miyata,  
(invited) Tadatsugu Minami (Kanazawa Institute of Technology, Japan)
- 14:40 **PA1-3-2 Optical Properties and Band Structures Cu(In,Ga)Se<sub>2</sub> and Cu-Deficient Phases**,  
(invited) **Cu(In,Ga)<sub>3</sub>Se<sub>5</sub> and Cu(In,Ga)<sub>5</sub>Se<sub>8</sub>**, Takahiro Wada, Tsuyoshi Maeda (Ryukoku University, Japan)
- 15:10 **PA1-3-3 First-Principles Study of Defect Formation in the Photovoltaic Semiconductor Cu<sub>2</sub>ZnGeSe<sub>4</sub>**,  
Hironori Nishihara, Tsuyoshi Maeda, Takahiro Wada (Ryukoku University, Japan)
- 15:30 **PA1-3-4 Analysis for Leakage Currents within Unlaminated Photovoltaic-Module-Like Layer Stacks in a Cell-Level Potential-Induced Degradation Test**, Seira Yamaguchi, Keisuke Ohdaira (Japan Advanced Institute of Science and Technology, Japan)
- 15:50 **PA1-3-5 Bending Cyclic Load Test for Crystalline Si Photovoltaic Modules**, Soh Suzuki<sup>1,2</sup>,  
Takuya Doi<sup>3</sup>, Atsushi Masuda<sup>3</sup>, Tadanori Tanahashi<sup>1</sup> (<sup>1</sup>Espec Corp., Japan, <sup>2</sup>Photovoltaic Power Generation Technology Research Association, Japan, <sup>3</sup>National Institute of Advanced Industrial Science and Technology, Japan)

### Break

### PARALLEL SESSION 2

#### PA2-1 : Thin-Film Transistors

**Chairperson :** Yukiharu Uraoka (Nara Institute of Science and Technology, Japan)

- 16:30 **PA2-1-1 Chemical Solution Process of In-Based Oxides and MoS<sub>2</sub> for Thin Film Transistors**,  
(invited) Eisuke Tokumitsu (Japan Advanced Institute of Science and Technology, Japan)
- 17:00 **PA2-1-2 Evaluation Stress Stabilities in Amorphous In-Ga-Zn-O Thin Film Transistors: Effect of Passivation with Si-based Resin**, Mototaka Ochi, Aya Hino, Hiroshi Goto, Kazushi Hayashi,  
(invited) Toshihiro Kugiyama (Kobe Steel Ltd., Japan)
- 17:30 **PA2-1-3 3-D Stacked Complementary Circuit with n-Type  $\alpha$ -IGZO and p-Type F8T2 TFTs - Tolerant Characteristic against Temperature Change** - Takayuki Hasegawa<sup>1</sup>, Masashi Inoue<sup>1</sup>,  
Mutsumi Kimura<sup>1</sup>, Kenji Nomura<sup>2</sup>, Toshio Kamiya<sup>2</sup>, Hideo Hosono<sup>2</sup> (<sup>1</sup>Ryukoku University, Japan, <sup>2</sup>Tokyo Institute of Technology, Japan)
- 17:50 **PA2-1-4 A Novel Method for Low-Temperature Ultraviolet-Ozone Channel Activation of Amorphous In-Ga-Zn-O Thin Transistors**, Michael Paul Jallorina, Juan Paolo Bermundo, Yasuaki Ishikawa, Yukiharu Uraoka (Nara Institute of Science and Technology, Japan)

#### PA2-2 : THz Electronics

**Chairperson :** Masahiko Tani (University of Fukui, Japan)

- 16:30 **PA2-2-1 Application of Terahertz Wave for Polymer Science**, Hiromichi Hoshina  
(invited) (RIKEN, Japan)
- 17:00 **PA2-2-2 Terahertz Oscillators and Receivers Using Electron Devices for Applications**, Safumi Suzuki,  
(invited) Masahiro Asada (Tokyo Institute of Technology, Japan)
- 17:30 **PA2-2-3 Study of Terahertz Radiation Propagation in Stratified GaAs/InGaAs/GaAs Structure for Detection Applications**, Anatoly Koval'chuk<sup>1</sup>, Irina Khmyrova<sup>2</sup>, Sergei Shapoval<sup>1</sup> (<sup>1</sup>IMT RAS, Russia, <sup>2</sup>University of Aizu, Japan)

- 17:50 **PA2-2-4 Effects of Metal V-Grooved Waveguide Gap Width on High Efficient THz Waves Generations Using Laser Chaos and Super Focusing**, Fumiyoshi Kuwashima<sup>1</sup>, Takuya Shirao<sup>1</sup>, Yusuke Akamine<sup>1</sup>, Kazuyuki Iwao<sup>1</sup>, Manatsu Ooi<sup>1</sup>, Naoya Sakaue<sup>1</sup>, Takurou Sirasaki<sup>1</sup>, Siori Gouda<sup>1</sup>, Masahiko Tani<sup>2</sup>, Kazuyoshi Kurihara<sup>2</sup>, Kohji Yamamoto<sup>2</sup>, Osamu Morikawa<sup>3</sup>, Hideaki Kitahara<sup>2</sup>, Makoto Nakajima<sup>4</sup> (<sup>1</sup>Fukui University of Technology, Japan, <sup>2</sup>University of Fukui, Japan, <sup>3</sup>Chair of Liberal Arts, Japan Coast Guard Academy, Japan, <sup>4</sup>Osaka University, Japan)

#### PA2-3 : Photovoltaics II (Organic)

Chairperson : Tatsuo Mori (Aichi Institute of Technology, Japan)

- 16:30 **PA2-3-1 A Hydrophobic Hole Transporting System to Improve Moisture Stability of Perovskite Solar Cells**, Lixin Xiao, Yingzhuang Ma, Lingling Zheng, Cuncun Wu (Peking University, China)
- 17:00 **PA2-3-2 Recent Progress in All Vacuum Processed Perovskite Solar Cells**, Chien-Yu Chen, (invited) Sheng-Yi Hsiao, Wei-Hung Lee, Wei-Lun Tsai, Hung-Yu Lin, Kai-Ming Chiang, Hao Wu Lin (National Ching Hua University, Taiwan)
- 17:30 **PA2-3-3 Interface Engineering between Electron Transport Layer and Perovskite Layer for Perovskite Solar Cells**, Takurou N. Murakami<sup>1</sup>, Takashi Funaki<sup>1</sup>, Tetsuhiko Miyadera<sup>1</sup>, Ludmila Cojocaru<sup>2</sup>, Said Kazaoui<sup>1</sup>, Masayuki Chikamatsu<sup>1</sup>, Hiroshi Segawa<sup>2</sup> (<sup>1</sup>National Institute of Advanced Industrial Science and Technology, Japan, <sup>2</sup>University of Tokyo, Japan)
- 17:50 **PA2-3-4 Grating-Coupled Surface Plasmon Resonance Enhanced Organic Photovoltaic Devices Induced by Blu-Ray Disc Recordable and Blu-Ray Disc Grating Structures**, Supeera Nootchanat<sup>1,2</sup>, Apichart Pangdam<sup>1,2</sup>, Ryousuke Ishikawa<sup>1</sup>, Kanet Wongravee<sup>2</sup>, Kazunari Shinbo<sup>1</sup>, Keizo Kato<sup>1</sup>, Futao Kaneko<sup>1</sup>, Sanong Ekgasit<sup>2</sup>, Akira Baba<sup>1</sup> (<sup>1</sup>Niigata University, Japan, <sup>2</sup>Chulalongkorn University, Thailand)

#### Banquet (Yours Hotel) (18:30 - 20:30)

Wednesday, June 21, 2017

#### PARALLEL SESSION 3

##### PA3-1 : Inorganic (Compound Semiconductors)

Chairperson : Joel T. Asubar (University of Fukui, Japan)

- 09:00 **PA3-1-1 Current Understanding and Challenges of Metal-Oxide-Semiconductor Gated GaN HFETs**, (invited) Milan Tapajna, Dagmar Gregusova, Karol Frohlich, Jan Kuzmik (Slovak Academy of Sciences, Slovakia)
- 09:30 **PA3-1-2 Progress of Wide Band Gap Power Devices**, Katsunori Ueno (invited) (Fuji Electric Co., Japan)
- 10:00 **PA3-1-3 Enhancement-Mode AlGaIn/GaN MIS-HEMTs with Recessed-Gate Structures Exhibiting High Threshold Voltage**, Wataru Gamachi, Kotaro Ishii, Joel T. Asubar, Hirokuni Tokuda, Masaaki Kuzuhara (University of Fukui, Japan)

##### PA3-2 : Bioelectronics

Chairperson : Ichiro Yamashita (Nara Institute of Science and Technology, Japan)

- 9:00 **PA3-2-1 Massive Parallel Operation of Bio-Substance by Microfluidic Techniques**, Yuzuru Takamura (invited) (Japan Advanced Institute of Science and Technology, Japan)
- 9:30 **PA3-2-2 Biodegradable Neural Cell Culture Sheet Made of Poly (Lactic-Co-Glycolic Acid) Thin Film with Micropatterns of Polylysine Containing Laminin Layer**, Yuki Nakamura, Shunpu Horiuchi, Eiki Koshinuma, Satomitsu Imai, Yasuhiro Nishioka (Nihon University, Japan)
- 9:50 **PA3-2-3 Development of Graphene Oxide-poly(3,4-ethylenedioxythiophen) / poly(styrenesulfonate) Thin Film-Based Electrochemical-Surface Plasmon Resonance Immunosensor**, Chammari Pothipor<sup>1,2</sup>, Kontad Ounnunkad<sup>2</sup>, Chutiparn Lertvachirapaiboon<sup>1</sup>, Kazunari Shinbo<sup>1</sup>, Keizo Kato<sup>1</sup>, Futao Kaneko<sup>1</sup>, Akira Baba<sup>1</sup> (<sup>1</sup>Niigata University, Japan, <sup>2</sup>Chiang Mai University, Thailand)
- 10:10 **PA3-2-4 Highly Sensitive QCM Based Biosensor Using Au Dendrite Structure**, N. Asai, T. Yoshimura, T. Shimizu, S. Shingurbara, T. Ito (Kansai University, Japan)

**PA3-3 : Polymers and Nanostructures****Chairperson :** Akira Baba (Niigata University, Japan)

- 9:00 **PA3-3-1 Aspartame-Imprinted Conducting Polymer Pillar Arrays Using Insulating Inverse Silica**  
(invited) **Photonic Crystals**, Jin Young Park (Kyungpook National University, Korea)
- 9:30 **PA3-3-2 Mechanical, Electronic Properties and Its Strain Engineering of Metal-Organic Frameworks: A First-Principles Study**, Xiaoyuan Wang<sup>1</sup>, Fengpeng Zhao<sup>1</sup>, Yabin Yan<sup>1,2</sup>  
(<sup>1</sup>China Academy of Engineering Physics, China, <sup>2</sup>Kyoto University, Japan)
- 9:50 **PA3-3-3 Synthesis of NiNW/ Cellulose Nano Hybrid via Liquid Phase Reduction**,  
Siti Rahmah Shamsuri<sup>1</sup>, Eiichiro Matsubara<sup>1</sup>, Shohei Shiomi<sup>2</sup> (<sup>1</sup>Kyoto University, Japan, <sup>2</sup>Kyoto Municipal Institute of Industrial Technology and Culture, Japan)
- 10:10 **PA3-3-4 Acrobatic Crystals - Actuators on the Nanoscale**, Jasminka Popovic<sup>1</sup>, Ivor Loncaric<sup>2</sup>,  
Zeljko Skoko<sup>3</sup> (<sup>1</sup>Rudjer Boskovic Institute, Croatia, <sup>2</sup>Centro de Fisica de Materiales CFM/MPC, Spain, <sup>3</sup>University of Zagreb, Croatia)

**Break****PARALLEL SESSION 4****PA4-1 : Inorganic (Silicon)****Chairperson :** Yukinori Ono (Shizuoka University, Japan)

- 10:50 **PA4-1-1 Single-Electron Tunneling via Dopant-Quantum-Dots Embedded in Silicon Nano-**  
(invited) **Transistors and Nano-Diodes**, Daniel Moraru, Michiharu Tabe (Shizuoka University, Japan)
- 11:20 **PA4-1-2 Formation of Al and Hf Germanates as Interlayers between High-κ Dielectrics and Ge Substrates by Radical-Enhanced Atomic Layer Deposition**, Daichi Yamada<sup>1</sup>, Yohei Otani<sup>1</sup>,  
Chiaya Yamamoto<sup>2</sup>, Junji Yamanaka<sup>2</sup>, Tetsuya Sato<sup>2</sup>, Hiroshi Okamoto<sup>3</sup>, Yukio Fukuda<sup>1</sup> (<sup>1</sup>Tokyo University of Science, Japan, <sup>2</sup>University of Yamanashi, Japan, <sup>3</sup>Hirotsuki University, Japan)
- 11:40 **PA4-1-3 Luminescent Si Nanomaterials Prepared from Agricultural Residues of Rice Husks**,  
Kimihiwa Matsumoto<sup>1</sup>, Kazuhide Kamiya<sup>1</sup>, Shigeki Kawabata<sup>1</sup>, Shinya Suzuki<sup>2</sup> (<sup>1</sup>Toyama Prefectural University, Japan, <sup>2</sup>Nagano National College of Technology, Japan)

**PA4-2 (Spintronics and Nanostructures)****Chairperson:** Naotaka Uchitomi (Nagaoka University of Technology, Japan)

- 10:50 **PA4-2-1 Spin Conversion Phenomena in Spintronics**, Yoshichika Otani<sup>1,2</sup>, Kouta Kondou<sup>2</sup>,  
(invited) Shutaru Karube<sup>1</sup>, Junyeon Kim<sup>2</sup> (<sup>1</sup>University of Tokyo, Japan, <sup>2</sup>RIKEN, Japan)
- 11:20 **PA4-2-2 Simultaneous Measurement of Local and Non-Local Spin-Valve Signals in MnAs/GaAs/InAs/GaAs(111)B Hybrid Structure**, Md. Earul Islam, Kazuki Hayashida,  
Masashi Akabori (Japan Advanced Institute of Science and Technology, Japan)
- 11:40 **PA4-2-3 Influence of Behaviour of Magnetic Particles in Ferrofluids against Alternating Magnetic Fields on Harmonic Responses**, Shoya Oda, Yoshitaka Kitamoto (Tokyo Institute of Technology, Japan)

**PA4-3 (Electronic Devices and Nanostructures)****Chairpersons:** Noriaki Ikenaga (Kanazawa Institute of Technology, Japan)

Takeshi Kawae (Kanazawa University, Japan)

- 10:50 **PA4-3-1 Nano-Level Analytical and Evaluation Techniques Essential to the Development of ULSI**  
(invited) **and Nano-Devices**, Osamu Ueda (Kanazawa Institute of Technology, Japan)
- 11:20 **PA4-3-2 Electrical Characteristics of SrBi<sub>2</sub>Ta<sub>2</sub>O<sub>9</sub> Ferroelectric Thin Film Formed by Kr/O<sub>2</sub> Sputtering**, B. J. Zeng<sup>1,2</sup>, Q. X. Peng<sup>2</sup>, Y. C. Zhou<sup>2</sup>, S. Ohmi<sup>1</sup> (<sup>1</sup>Tokyo Institute of Technology, Japan, <sup>2</sup>Xiangtan University, China)
- 11:40 **PA4-3-3 Vacancy Induced Phonon Properties of Single Wall Carbon Nanotube**,  
Ashraf Hossain Howlader<sup>1</sup>, Md. Sherajul Islam<sup>2</sup>, Md. Rafiqul Islam<sup>2</sup>, Ashraf Ghani Bhuiyan<sup>2</sup>  
(<sup>1</sup>Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Bangladesh, <sup>2</sup>Khulna University of Engineering and Technology, Bangladesh)

**POSTER SESSION 3 (12:00 - 13:30)****Break****CLOSING REMARKS (14:00 - 14:20)****Excursion (Ichijodani) (14:30 - 17:00)**

## EM-NANO 2017 POSTER SESSION

### Poster session 1 (June 19, 18:00 - 19:30)

<b>PO1-1</b>	<b>Electrical Characterization of <math>\beta</math>-Ga<sub>2</sub>O<sub>3</sub> Single Crystal Substrate</b> , Yoshitaka Nakano (Chubu University, Japan)
<b>PO1-2</b>	<b>Electrical Characterization of p-GaN Film Homo-Epitaxially Grown on Free-Standing GaN Substrate</b> , Yoshitaka Nakano (Chubu University, Japan)
<b>PO1-3</b>	<b>Growth Nature of InSb Channel Layer on Heteroepitaxial Film of InGaSb Barrier Layer on GaSb/Si(111)-<math>\sqrt{3}\times\sqrt{3}</math>-Ga Surface</b> , A.A.Md.Monzur-UI-Akhir, Masayuki Mori, Koichi Maezawa (Toyama University, Japan)
<b>PO1-4</b>	<b>Study on High Frequency Loss in Coplanar Waveguides Fabricated on Si Substrate</b> , Kosuke Suzuki, Joel T. Asubar, Hirokuni Tokuda, Masaaki Kuzuhara (University of Fukui, Japan)
<b>PO1-5</b>	<b>Primitive Study of VOC Sensor Using QCM Coated with Carbon Black</b> , Takeshi Ito, Hiroshi Takahashi, Tomohiro Shimizu, Shoso Shingubara (Kansai University, Japan)
<b>PO1-6</b>	<b>Optical and Radioluminescence Properties of Dy-doped 12CaO·7Al<sub>2</sub>O<sub>3</sub> Electride Single Crystals</b> , Narumi Kumamoto, Daisuke Nakauchi, Takumi Kato, Go Okada, Noriaki Kawaguchi, Takayuki Yanagida (Nara Institute of Science and Technology, Japan)
<b>PO1-7</b>	<b>Liquid-Phase Synthesis of Vertically Aligned Carbon Nanotubes and Related Nanomaterials on Preheated Alloy Substrates</b> , Kiyofumi Yamagiwa <sup>1</sup> , Jun Kuwano <sup>2</sup> ( <sup>1</sup> Teikyo University of Science, Japan, <sup>2</sup> Tokyo University of Science, Japan)
<b>PO1-8</b>	<b>Fabrication of Lead-free Piezoceramics with Vertical MPB</b> , Miao Yan, Tomoaki Karaki, Tadasu Fujii (Toyama Prefectural University, Japan)
<b>PO1-9</b>	<b>Luminescent and Scintillation Properties of Ce-doped Tb<sub>3</sub>Ga<sub>x</sub>Al<sub>5-x</sub>O<sub>12</sub> Single Crystals</b> , Daisuke Nakauchi, Go Okada, Noriaki Kawaguchi, Takayuki Yanagida (Nara Institute of Science and Technology, Japan)
<b>PO1-10</b>	<b>Enhanced Electrochemical Performance of Carbon Quantum Dots-Polyaniline Hybrid</b> , Zhichao Zhao, Yibing Xie (Southeast University, China)
<b>PO1-11</b>	<b>Fabrication and Supercapacitor Behavior of Phosphomolybdic Acid/Polyaniline/Titanium Nitride Core-Shell Nanowire Array</b> , Lu Lu, Yibing Xie (Southeast University, China)
<b>PO1-12</b>	<b>Growth of Langasite-type Ca<sub>3</sub>NbGa<sub>3-x</sub>Al<sub>x</sub>Si<sub>2</sub>O<sub>14</sub> Single Crystals</b> , Yuki Kiyohara, Masakazu Kobayashi, Tomoaki Karaki, Tadashi Fuji (Toyama Prefectural University, Japan)
<b>PO1-13</b>	<b>Doping Nitrogen in InGaZnO Thin Film Transistor with Double Layer Channel Structure</b> , Sheng-Po Chang (National Cheng Kung University, Taiwan)
<b>PO1-14</b>	<b>The Charge-Discharge Characteristics of Mg-Zn-Al Powder with Ag Nanoparticles-Modified at High Temperature Environment</b> , Kuan-Jen Chen, Fei-Yi Hung, Truan-Sheng Lui, Tung-Hsuan Hsiao (National Cheng Kung University, Taiwan)
<b>PO1-15</b>	<b>Preparation of Cu<sub>2</sub>SnS<sub>3</sub> (CTS) Thin Film by Photo Chemical Deposition</b> , Amane Abe <sup>1</sup> , Katsuhiko Moriya <sup>1</sup> , Takeshi Houga <sup>1</sup> , Kunihiro Tanaka <sup>2</sup> ( <sup>1</sup> National Institute of Technology, Tsuruoka College, Japan, <sup>2</sup> Nagaoka University of Technology, Japan)
<b>PO1-16</b>	<b>Effect of Annealing Conditions of Cu<sub>2</sub>ZnSnS<sub>4</sub> Thin Films Prepared by Dip Coating</b> , Yusuke Togashi <sup>1</sup> , Katsuhiko Moriya <sup>1</sup> , Takeshi Houga <sup>1</sup> , Kunihiro Tanaka <sup>2</sup> ( <sup>1</sup> National Institute of Technology, Tsuruoka College, Japan, <sup>2</sup> Nagaoka University of Technology, Japan)
<b>PO1-17</b>	<b>Luminescence Characterizations of Sc-doped Al<sub>2</sub>O<sub>3</sub> Ceramics Prepared by Spark Plasma Sintering Method for Radiation Detectors</b> , Nurul Athirah Noor Azman, Takumi Kato, Go Okada, Noriaki Kawaguchi, Takayuki Yanagida (Nara Institute of Science and Technology, Japan)
<b>PO1-18</b>	<b>Formation of Graphitic Carbon Nitride Thin-Film on Sapphire Substrate</b> , Maito Kosaka, Noriyuki Urakami, Yoshio Hashimoto (Shinshu University, Japan)

<b>PO1-19</b>	<b>Tuning the Molecular Chain Distance to Improve Memory Window of Polyimide-Based Resistive Switching Memory</b> , Guan-Wei Lin, Min-Fang Kao, Chi-Chang Wu, Wen-Luh Yang (Feng Chia University, Taiwan)
<b>PO1-20</b>	<b>Luminescence Properties of Organic-Inorganic Layered Perovskite-Type Compounds under Vacuum Ultraviolet Irradiation</b> , Naoki Kawano <sup>1</sup> , Masanori Koshimizu <sup>2</sup> , Yutaka Fujimoto <sup>2</sup> , Go Okada <sup>1</sup> , Noriaki Kawaguchi <sup>1</sup> , Takayuki Yanagida <sup>1</sup> , Keisuke Asai <sup>2</sup> ( <sup>1</sup> Nara Institute of Science and Technology, Japan, <sup>2</sup> Tohoku University, Japan)
<b>PO1-21</b>	<b>Preparation of 0.09BaZrO<sub>3</sub>-0.9025(K<sub>0.45</sub>Na<sub>0.5</sub>Li<sub>0.05</sub>)NbO<sub>3</sub>-0.0075(La<sub>0.5</sub>Na<sub>0.5</sub>)TiO<sub>3</sub> Piezoelectric Thin Films from Precursor Solution by Pechini Method</b> , Liqiang Liu <sup>1</sup> , Tomoaki Karaki <sup>1</sup> , Tadashi Fujii <sup>1</sup> , Yuichi Sakai <sup>2</sup> ( <sup>1</sup> Toyama Prefectural University, Japan, <sup>2</sup> Toyama Industrial Technology Center, Japan)
<b>PO1-22</b>	<b>Visualization Method of Blood Flowing by Laser Doppler Velocimetry Using Speckle and Fringe Pattern</b> , Shunsuke Akiguchi <sup>1</sup> , Tomoaki Kyoden <sup>1</sup> , Shoji Naruki <sup>1</sup> , Tomoki Tajiri <sup>1</sup> , Tsugunobu Andoh <sup>2</sup> , Hiroki Ishida <sup>3</sup> , Tadashi Hachiga <sup>1</sup> ( <sup>1</sup> National Institute of Technology, Toyama College, Japan <sup>2</sup> University of Toyama, Japan, <sup>3</sup> Okayama University of Science, Japan)
<b>PO1-23</b>	<b>Multi-photon Confocal Microscope Evaluation of Fluorescent Centres in Ag-activated Phosphate Glass Irradiated with Heavy Charged Particles</b> , Toshio Kurobori <sup>1</sup> , Wataru Kada <sup>2</sup> , Taichi Shirao <sup>3</sup> , Takahiro Satoh <sup>4</sup> ( <sup>1</sup> Kanazawa University, Japan, <sup>2</sup> Gunma University, Japan, <sup>3</sup> Nikon Instech Co., Ltd., Japan, <sup>4</sup> Takasaki Advanced Radiation Research Institute, Japan)
<b>PO1-24</b>	<b>Bulk-Related Current Collapses in Carbon-Doped AlGa<sub>N</sub>/Ga<sub>N</sub>/Ga<sub>N</sub>:C Hetero-Structures Grown on Si Substrates</b> , Akihito Chikamatsu, Yoshitaka Nakano (Chubu University, Japan)
<b>PO1-25</b>	<b>Low-Temperature Solution Processed Indium Oxide Using Ultraviolet Annealing</b> , Yuuki Yoshimoto, Jinwang Li, Tatsuya Shimoda (Japan Advanced Institute of Science and Technology, Japan)
<b>PO1-26</b>	<b>Study of Fabricating Orientated Lead-Free Piezoceramics Using Plate-Like Powders</b> , Yoshiaki Ido, Yao Lu, Tomoaki Karaki, Tadashi Hujii (Toyama Prefectural University, Japan)
<b>PO1-27</b>	<b>Estimation of Activation Energy of Si-doped <math>\beta</math>-Ga<sub>2</sub>O<sub>3</sub> Thin Films</b> , Satoshi Itoh <sup>1</sup> , Iwan Dwi Antoro <sup>1</sup> , Takashi Nakajima <sup>2</sup> , Takeshi Kawae <sup>1</sup> ( <sup>1</sup> Kanazawa University, Japan, <sup>2</sup> Tokyo University of Science, Japan)
<b>PO1-28</b>	<b>Composites of Hydroxyethyl Cellulose and M<sup>2+</sup> Chelate Complexes as an Effective Electron-injection Layer for Polymer Light-emitting Diodes</b> , Yun Chen, Cheng-Liang Wu, Chih-Yang Lin (National Cheng Kung University, Taiwan)
<b>PO1-29</b>	<b>Simple Quantization Method of Localized Surface Plasmon for Quantum Plasmonics</b> , Hisaki Oka, Yasuo Ohdaira (Niigata University, Japan)
<b>PO1-30</b>	<b>Surface Second Harmonic Generation (SHG) on the Au/TiO<sub>2</sub> (320) Interface and Bare TiO<sub>2</sub> (320)</b> , Haque MD Ehasanul <sup>1</sup> , Daiki Kobayashi <sup>1</sup> , Yuki Tomatsu <sup>1</sup> , Khuat Thi Thu Hien <sup>1</sup> , Goro Mizutani <sup>1</sup> , Harvey N. Rutt <sup>2</sup> ( <sup>1</sup> Japan Advanced Institute of Science and Technology, Japan, <sup>2</sup> University of Southampton, UK)
<b>PO1-31</b>	<b>High-Temperature Annealing Effect of Ferromagnetic ZnSnAs<sub>2</sub> Thin Films Heavily Doped with Mn</b> , Y. Minamizawa <sup>1</sup> , T. Kitazawa <sup>1</sup> , S. Hidaka <sup>1</sup> , H. Toyota <sup>1</sup> , S. Nakamura <sup>2</sup> , B. Mehdiyev <sup>1</sup> , N. Uchitomi <sup>1</sup> ( <sup>1</sup> Nagaoka University of Technology, Japan, <sup>2</sup> Aoyama Gakuin University, Japan)
<b>PO1-32</b>	<b>Porous Silicon Film Formation from Silicon-Nanoparticle Inks: the Possibility of Influences of van der Waals Interactions on Uniform Film Formation</b> , Kazuki Tanaka, Wataru Nagoya, Kazuya Moriki, Seiichi Sato (University of Hyogo, Japan)

<b>PO1-33</b>	<b>Improvement of Wettability of Porous Si by Carboxylate Termination</b> , M. Sakakibara <sup>1</sup> , K. Matsumoto <sup>1</sup> , K. Kamiya <sup>1</sup> , S. Kawabata <sup>1</sup> , M. Inada <sup>2</sup> , S. Suzuki <sup>3</sup> ( <sup>1</sup> Toyama Prefectural University, Japan, <sup>2</sup> Kansai University, Japan, <sup>3</sup> Nagano National College of Technology, Japan)
<b>PO1-34</b>	<b>Influence of Ambient Gas on the Electrical Conduction of Porous Silicon films Produced from Silicon Nanoparticle Inks</b> , Wataru Nagoya, Kazuki Tanaka, Kazuya Moriki, Seiichi Sato (University of Hyogo, Japan)
<b>PO1-35</b>	<b>Er-doped ZnO Films Deposited by an Alternative Pulsed Laser Deposition</b> , Satoru Yamada, Souki Urashita, Hiroto Kawae, Daiki Okada, Satoru Seto (National Institute of Technology, Ishikawa College, Japan)
<b>PO1-36</b>	<b>Fabrication of ZnO Multi-Layer Transparent Conductive Films by Spin-Coating Method and Discussion on Improving Their Performance</b> , Yusuke Morita, Naoki Ohtani (Doshisha University, Japan)
<b>PO1-37</b>	<b>Blue-color Photoluminescence from Natural Pigments Extracted from Fraxinus Lanuginosa</b> , Yusuke Kinou, Naoki Ohtani (Doshisha University, Japan)
<b>PO1-38</b>	<b>Antioxidant Effect of <math>\beta</math>-Carotene and Lutein Isolated and Purified from Spinach on Photoluminescence Lifetime of Organic Emissive Materials</b> , Shun Imada, Takato Ito, Naoki Ohtani (Doshisha University, Japan)
<b>PO1-39</b>	<b>Fabrication of Emissive Thin Films Using Nano-amorphous Graphitic Carbon Nitride Powders</b> , Takahiro Watanabe <sup>1</sup> , Masaaki Hirai <sup>2</sup> , Ken-ichi Takarabe <sup>2</sup> , Naoki Ohtani <sup>1</sup> ( <sup>1</sup> Doshisha University, Japan, <sup>2</sup> Okayama University of Science, Japan)
<b>PO1-40</b>	<b>Investigation of Photoluminescence from <math>\text{Cu}_2\text{ZnSnS}_4</math> Depending on Growth Temperature</b> , Yoshiharu Takamatsu, Kunihiko Tanaka (Nagaoka University of Technology, Japan)
<b>PO1-41</b>	<b>Fabrication of Core-Shell Quantum Dot Films by a Spin-Coating Method and Their Application to Light-Emitting Diodes</b> , Chisato Konishi, Naoki Ohtani (Doshisha University, Japan)
<b>PO1-42</b>	<b>Influence of Au Nanoparticles on Magnetic Characteristics in TbFeCo/Au Nanostructures</b> , Ryousuke Hara <sup>1</sup> , Haruki Yamane <sup>2</sup> , Masanobu Kobayasi <sup>1</sup> , Xiaoxi Liu <sup>3</sup> , Akimitsu Morisako <sup>3</sup> , Yukiko Yasukawa <sup>1</sup> ( <sup>1</sup> Chiba Institute of Technology, Japan, <sup>2</sup> Akita Industrial Technology Center, Japan, <sup>3</sup> Shinshu University, Japan)
<b>PO1-43</b>	<b>Analysis of Optics Properties and Carrier Transport in a Biased GaAs/AlAs Asymmetric Quintuple-Quantum-Well Superlattice</b> , Kousuke Yoshida <sup>1</sup> , Makoto Hosoda <sup>2</sup> , Kouichi Akahane <sup>3</sup> , Naoki Ohtani <sup>1</sup> ( <sup>1</sup> Doshisha University, Japan, <sup>2</sup> Shizuoka University, Japan, <sup>3</sup> National Institute of Information and Communications Technology, Japan)
<b>PO1-44</b>	<b>Platinum-Free, Carbon-Based Materials as Efficient Counter Electrodes for Dye-Sensitized Solar Cells</b> , Hendri Widiyandari <sup>1</sup> , Adi Prasetyo <sup>1</sup> , Agus Purwanto <sup>2</sup> , Agus Subagio <sup>1</sup> , Muhammad Hilmy Alfaruqi <sup>3</sup> ( <sup>1</sup> Diponegoro University, Indonesia, <sup>2</sup> Sebelas Maret University, Indonesia, <sup>3</sup> Chonnam National University, Korea)
<b>PO1-45</b>	<b>Diffusion of Hydroxyl Groups Through Binding Interface between Hydroxyl-Containing and Oxygen-Deficient Silica Glasses</b> , Yu Arakawa <sup>1</sup> , Naoya Sato <sup>1</sup> , Nobu Kuzuu <sup>1</sup> , Hideharu Horikoshi <sup>2</sup> , Hiroki Sakakibara <sup>1</sup> ( <sup>1</sup> University of Fukui, Japan, <sup>2</sup> Tosoh SGM Corp., Japan)
<b>PO1-46</b>	<b>Fabrication of H-Terminated Diamond MISFET with <math>\text{Al}_2\text{O}_3</math> as Buffer Layer</b> , S. Shoji, H. Furuichi, T. Kawae (Kanazawa University, Japan)
<b>PO1-47</b>	<b>Fabrication of Carbon Nitride-based Emissive Thin Films by Wet Process Using Annealed Melamine</b> , Katsuya Wada, Naoki Ohtani (Doshisha University, Japan)
<b>PO1-48</b>	<b>1T Type Ferroelectric Random Access Memory with <math>\text{MoS}_2</math> Channel</b> , S. Shimizu <sup>1</sup> , Sadamune Watanabe <sup>1</sup> , Takashi Nakajima <sup>2</sup> , Takeshi Kawae <sup>1</sup> ( <sup>1</sup> Kanazawa University, Japan, <sup>2</sup> Tokyo University of Science, Japan)



<b>PO1-49</b>	<b>Diffusion Coefficient of Hydroxyl Group in Vitreous Silica</b> , Naoya Sato <sup>1</sup> , Yu Arakawa <sup>1</sup> , Nobu Kuzuu <sup>1</sup> , Hideharu Horikoshi <sup>2</sup> , Hiroki Sakakibara <sup>1</sup> , Naohiro Horii <sup>3</sup> ( <sup>1</sup> University of Fukui, Japan, <sup>2</sup> Tosoh SGM Corp., Japan, <sup>3</sup> National Institute of Technology, Fukui College, Japan )
<b>PO1-50</b>	<b>Preparation of Transparent CuI-CuBr Alloy Thin Films with Solution Processing</b> , Taiga Harada <sup>1</sup> , Shoko Tao <sup>1</sup> , Toshiki Imamura <sup>1</sup> , Katsuhiko Moriya <sup>2</sup> , Nobuo Saito <sup>1</sup> , Kunihiro Tanaka <sup>1</sup> ( <sup>1</sup> Nagaoka University of Technology, Japan, <sup>2</sup> National Institute of Technology, Tsuruoka College, Japan)
<b>PO1-51</b>	<b>Cl-free CZTS Thin Film Solar Cell Fabricated by Non-Vacuum Process</b> , Atsushi Munemura, Kyouhei Yamamoto, Kunihiro Tanaka (Nagaoka University of Technology, Japan)
<b>PO1-52</b>	<b>Effect of Air Assisted Flow on Organic Perovskite Solar Cells Fabricated by One Step Spin-Coating Method</b> , Hiroyuki Okada, Kenta Saito, Vincent Obiozo Eze, Yoshiyuki Seike, Tatsuo Mori (Aichi Institute of Technology, Japan )
<b>PO1-53</b>	<b>Optical Properties of Wannier excitons in Closely Located Quantum Wells in Organic-Inorganic Layered Perovskite-Type Compounds</b> , Daiki Tajima, Masanori Koshimizu, Yutaka Fujimoto, Keisuke Asai (Tohoku University, Japan)
<b>PO1-54</b>	<b>Electronic Structure and Magnetic Properties of Mn-doped Perovskites for Solar Cell Applications</b> , Atsushi Suzuki, Takeo Oku (University of Shiga Prefecture, Japan)

#### Poster session 2 (June 20, 12:30 - 14:00)

<b>PO2-1</b>	<b>Electrospinning of Silver/Polymer Composite Nanofiber Mats for Lightweight and Flexible Electrodes</b> , Han-Hsuan Chen, Jyun-You Su, Chien-Tin Lin, Yu-Yu Cho, Changshu Kuo (National Cheng Kung University, Taiwan)
<b>PO2-2</b>	<b>Study of Organic/Inorganic Polymer/Quantum Dot Nanocomposite for Lighting and Displays</b> , Hsueh-Shih Chen, Wen Hsin Tsai, Shang-Chieh Huang, Chang-Wei Yeh, Guan-Hong Chen (National Tsing Hua University, Taiwan)
<b>PO2-3</b>	<b>Scintillation and Dosimetric Properties of Tb-doped LiCaAlF<sub>6</sub> Single Crystals</b> , Noriaki Kawaguchi <sup>1</sup> , Naoki Kawano <sup>1</sup> , Go Okada <sup>1</sup> , Kentaro Fukuda <sup>2</sup> , Takayuki Yanagida <sup>1</sup> ( <sup>1</sup> Nara Institute of Science and Technology, Japan, <sup>2</sup> Tokuyama Corp., Japan)
<b>PO2-4</b>	<b>Preparation of B1-(Cr,Ga)N Thin Films by Pulsed Laser Deposition</b> , Yusei Mizuno, Tsuneo Suzuki, Tadachika Nakayama, Hisayuki Suematsu (Nagaoka University of Technology, Japan)
<b>PO2-5</b>	<b>Preparation of Ge doped Cu<sub>2</sub>ZnSn(S,Se)<sub>4</sub> Absorber Thin Films</b> , Daiki Miyazawa <sup>1</sup> , Mitsuki Shinohara <sup>1</sup> , Noritaka Momose <sup>1</sup> , Myo Than Htay <sup>2</sup> , Yoshio Hashimoto <sup>2</sup> , Kentaro Ito <sup>2</sup> ( <sup>1</sup> National Institute of Technology, Nagano College, Japan, <sup>2</sup> Shinshu University, Japan)
<b>PO2-6</b>	<b>Preparation of Aluminum Nanostructured Materials by a Two Step Heating Process in Spark Plasma Sintering</b> , Tosiki Honma <sup>1</sup> , Itsuhiko Hirota <sup>1</sup> , Yoshinori Tokoi <sup>1</sup> , Naritoshi Aoyagi <sup>1</sup> , Hisayuki Suematsu <sup>2</sup> ( <sup>1</sup> National Institute of Technology, Nagaoka College, Japan, <sup>2</sup> Nagaoka University of Technology, Japan)
<b>PO2-7</b>	<b>Characterization of Mn-doped ZnSnAs<sub>2</sub> Thin Films Below the Magnetic Percolation Threshold</b> , S. Saito <sup>1</sup> , M. Ogo <sup>1</sup> , S. Hidaka <sup>1</sup> , H. Toyota <sup>1</sup> , M. Akabori <sup>2</sup> , B. Mehdiyev <sup>1</sup> , N. Uchitomi <sup>1</sup> ( <sup>1</sup> Nagaoka University of Technology, Japan, <sup>2</sup> Japan Advanced Institute of Science and Technology, Japan)
<b>PO2-8</b>	<b>Structural and Thermoelectric Properties of Bismuth Telluride Nanoplate Thin Films with and without Carbon Nanotubes</b> , Yuichi Hosokawa, Kodai Wada, Masaki Tanaka, Koji Tomita, Masayuki Takashiri (Tokai University, Japan)
<b>PO2-9</b>	<b>Control of Particle Size and Phase by Dwell-Time on Pulsed Wire Discharge</b> , Taiga Murayama, Yoshinori Tokoi (National Institute of Technology, Nagaoka College, Japan)

<b>PO2-10</b>	<b>Planar Perovskite Solar Cells Employing CuSCN/ NPB Bilayer Structure as Hole Transport Layers</b> , Zong-Liang Tseng, Lung-Chien Chen, Yu-Jen Lin and Yan-Rong Hung (National Taipei University of Technology, Taiwan)
	<b>(Withdrawn) Towards Colloidal Spintronics: Rashba Spin-Orbit Coupling in PbS Nanosheets</b> , Mohammad Mehdi Ramin Moayed, Thomas Bielewicz, Martin Sebastian Zoellner, Carmen Herrmann, Christian Klinke (University of Hamburg, Germany)
<b>PO2-12</b>	<b>Computer Aided-Molecular Design of Functionalized Fullerenes and Graphenes</b> , Hiroto Tachikawa, Tetsuji Iyama, Hiroshi Kawabata (Hokkaido University, Japan)
<b>PO2-13</b>	<b>Density Functional Theory (DFT) Study on the Interaction of H<sub>2</sub> with Metal Atoms on Graphene Surface</b> , Tetsuji Iyama, Takahiro Fukuzumi, Hiroto Tachikawa (Hokkaido University, Japan)
<b>PO2-14</b>	<b>Density Functional Theory (DFT) Study on the Interaction of Hydrogen Atom with Graphene Nano-Flakes</b> , Hiroshi Kawabata, Tetsuji Iyama, Hiroto Tachikawa (Hokkaido University, Japan)
<b>PO2-15</b>	<b>Optimization of Film Thickness in Organic Multi-function Diodes Based on Rubrene/PTCDI-C13 Stack</b> , Masahiro Yamada, Shigeki Naka, Hiroyuki Okada (University of Toyama, Japan)
<b>PO2-16</b>	<b>Organic Light-Emitting Diodes with Printed Narrow Ag Auxiliary Wire</b> , Hiroki Kuroda <sup>1</sup> , Shigeki Naka <sup>1</sup> , Hiroyuki Okada <sup>1</sup> , Hiroyuki Kitazawa <sup>2</sup> , Masahito Okumura <sup>3</sup> , Tatsuya Nishimura <sup>3</sup> ( <sup>1</sup> University of Toyama, Japan, <sup>2</sup> SHASHIN KAGAKU CO., LTD., Japan, <sup>3</sup> SK-Electronics CO., LTD., Japan)
<b>PO2-17</b>	<b>Characterizing In/Ga-doped ZnO Fabricated Using Sol-Gel Synthesis Method</b> , Ji-Siou Huang, Leo Chau-Kuang Liao (Yuan Ze University, Taiwan)
<b>PO2-18</b>	<b>Effect of Electrochemical Processing on the Fabrication of Cu<sub>2</sub>O p-n Homojunction Diode</b> , Chin-Ming Chang, Leo Chau-Kuang Liao (Yuan Ze University, Taiwan)
<b>PO2-19</b>	<b>CNT/Graphite/ZnO Composite for Supercapacitor Electrode</b> , Agus Subagio <sup>1</sup> , Istajib A. Hikam <sup>1</sup> , Alfin Darari <sup>1</sup> , Priyono <sup>1</sup> , Pardoyo <sup>1</sup> , Ahmad Subhan <sup>2</sup> ( <sup>1</sup> Diponegoro University, Japan, <sup>2</sup> Center of Physics Research, LIPI, Japan)
<b>PO2-20</b>	<b>Preparation of Cu<sub>2</sub>(Sn,Si)S<sub>3</sub> Thin-film Solar Cells by Cu-Sn-Si Simultaneous Sputtering</b> , Masaki Aida <sup>1</sup> , Yusuke Wakui <sup>1</sup> , Noritaka Momose <sup>1</sup> , Myo Than Htay <sup>2</sup> , Yoshio Hashimoto <sup>2</sup> , Kentaro Ito <sup>2</sup> ( <sup>1</sup> National Institute of Technology, Nagano College, Japan, <sup>2</sup> Shinshu University, Japan)
<b>PO2-21</b>	<b>Density Functional Theory (DFT) Study on the Radical-Functionalized Graphenes and Fullerenes</b> , Shigeaki Abe <sup>1</sup> , Yuko Era <sup>1</sup> , Yukari Nakagawa <sup>1</sup> , Mariko Nakamura <sup>2</sup> , Teruo Kusaka <sup>1</sup> , Satoshi Inoue <sup>1</sup> , Yasuhiro Yoshida <sup>1</sup> , Hiroto Tachikawa <sup>1</sup> ( <sup>1</sup> Hokkaido University, Japan, <sup>2</sup> Kyushu University of Health and Welfare, Japan)
<b>PO2-22</b>	<b>Highly Crystalline Li<sub>4</sub>Ti<sub>5</sub>O<sub>12</sub> Material Synthesized using Salt Assisted-Solid State Reaction Method</b> , Agus Purwanto <sup>1</sup> , Hendri Widiyandari <sup>2</sup> , Alfa Tegar Augusta <sup>1</sup> , Rizqa Amalia Devi <sup>1</sup> , Arif Jumari <sup>1</sup> ( <sup>1</sup> Sebelas Maret University, Indonesia, <sup>2</sup> Diponegoro University, Indonesia)
<b>PO2-23</b>	<b>Fabrication of Mold and Stamp for Micro Contact Print to Realize Flexible Liquid Crystal Devices</b> , Masaki Kataoka, Hiroyuki Okada (University of Toyama, Japan)
<b>PO2-24</b>	<b>Improved Performance of Multilayer Inverted Polymer Light-Emitting Diode with a Tantalum Oxide Nanosheet Electron Injection Layer</b> , Eiji Itoh, Taichi Hasebe (Shinshu University, Japan)
<b>PO2-25</b>	<b>Estimation of Carrier Mobility of Organic Semiconductor Films in MIS Diodes Consisting of High-κ Oxide/Organic Semiconductor Double Layers</b> , Naoya Tyosei, Eiji Itoh (Shinshu University, Japan)

<b>PO2-26</b>	<b>Fabrication of Three-Terminal Hanle Devices and its Evaluation Using Mn-Doped ZnSnAs<sub>2</sub> Thin Film Grown on InP(001) Substrates</b> , Shiro Hidaka <sup>1</sup> , Hideyuki Toyota <sup>1</sup> , Masashi Akabori <sup>2</sup> , Naotaka Uchitomi <sup>1</sup> ( <sup>1</sup> Nagaoka University of Technology, Japan, <sup>2</sup> Japan Advanced Institute of Science and Technology, Japan)
<b>PO2-27</b>	<b>Al<sub>2</sub>O<sub>3</sub> Passivation of Amorphous IGZO Thin Film Transistors through Atomic Layer Deposition using Dimethylaluminum Hydride as Precursor</b> , Dianne Corsino <sup>1</sup> , Juan Paolo Bermundo <sup>1</sup> , Kiyoshi Takahashi <sup>2</sup> , Yasuaki Ishikawa <sup>1</sup> , Yukiharu Uraoka <sup>1</sup> ( <sup>1</sup> Nara Institute of Science and Technology, Japan, <sup>2</sup> Nippon Aluminum Alkyls, Ltd., Japan)
<b>PO2-28</b>	<b>Formation Mechanism of Graphene-on-Diamond Using Nickel as a Catalyst</b> , Yutaro Katagiri <sup>1</sup> , Shohei Kanada <sup>1</sup> , Taira Tabakoya <sup>1</sup> , Masatsugu Nagai <sup>1</sup> , Takahiro Yamamoto <sup>1</sup> , Toshiharu Makino <sup>2</sup> , Satoshi Yamasaki <sup>2</sup> , Tsubasa Matsumoto <sup>1</sup> , Norio Tokuda <sup>1</sup> , Takao Inokuma <sup>1</sup> ( <sup>1</sup> Kanazawa University, Japan, <sup>2</sup> National Institute of Advanced Industrial Science and Technology, Japan)
<b>PO2-29</b>	<b>Effects of Non-Toxic Metal Element Addition into Perovskite Photovoltaic Devices</b> , Yasuhiro Shirahata, Takeo Oku (University of Shiga Prefecture, Japan)
<b>PO2-30</b>	<b>Formation of Epitaxial ReS<sub>2</sub> (0001) Thin-Film on c-Plane Sapphire Substrate</b> , Noriyuki Urakami, Tetsuya Okuda, Yoshio Hashimoto (Shinshu University, Japan)
<b>PO2-31</b>	<b>Photoluminescence Properties of Ce<sup>3+</sup> and Eu<sup>2+</sup> Co-Doped CaY<sub>2</sub>Si<sub>2</sub>S<sub>8</sub> Phosphors</b> , Yasuhiro Nemoto, Tomu Tanabe, Ariyuki Kato (Nagaoka University of Technology, Japan)
<b>PO2-32</b>	<b>Phase Control of Eu-doped Sr<sub>2</sub>SiO<sub>4</sub> Phosphor by Eu Concentration and Sintering Temperature</b> , Siti Sarina Binti Nasir, Kouta Yakura, Noriyuki Horiuchi, Ariyuki Kato (Nagaoka University of Technology, Japan)
<b>PO2-33</b>	<b>Structural and Optical Properties of Silicon Spheres and Anti-Reflection Films for Spherical Silicon Solar Cells</b> , Yasuhiro Shirahata <sup>1</sup> , Takeo Oku <sup>1</sup> , Youichi Kanamori <sup>2</sup> , Mikio Murozono <sup>2</sup> ( <sup>1</sup> University of Shiga Prefecture, Japan, <sup>2</sup> Clean Venture 21 Corp., Japan)
<b>PO2-34</b>	<b>Effect of <sup>10</sup>B Isotope Doping on Phonon Modes of 2D h-BN</b> , Md. Sherajul Islam <sup>1</sup> , Akihiro Hashimoto <sup>2</sup> ( <sup>1</sup> Khulna University of Engineering and Technology, Bangladesh, <sup>2</sup> University of Fukui, Japan)
<b>PO2-35</b>	<b>The Nozzle Shape Stereographic Microstructure Produced by Direct Laser writing on Dual Layer Resists</b> , Chun-Ming Chang, Wen-Tse Hsiao, Chih-Chung Yang, Shih-Feng Tseng, Donyau Chiang (National Applied Research Laboratories, Taiwan)
<b>PO2-36</b>	<b>Particle Size Control of Magnesium Submicron Particles Prepared by Pulsed Wire Discharge</b> , Nguyen Duy Hieu <sup>1</sup> , Yoshinori Tokoi <sup>2</sup> , Kenta Tanaka <sup>1</sup> , Tsuneo Suzuki <sup>1</sup> , Tadachika Nakayama <sup>1</sup> , Hisayuki Suematsu <sup>1</sup> , Koichi Niihara <sup>1</sup> ( <sup>1</sup> Nagaoka University of Technology, Japan, <sup>2</sup> Nagaoka National College of Technology, Japan)
<b>PO2-37</b>	<b>Fabrication of SnS Films Deposited by the Sol-Gel Method</b> , Hiroto Oomae <sup>1</sup> , Takahito Eguchi <sup>1</sup> , Kunihiro Tanaka <sup>2</sup> ( <sup>1</sup> National Institute of Technology, Kushiro College, Japan, <sup>2</sup> Nagaoka University of Technology, Japan)
<b>PO2-38</b>	<b>NIR-Responsive Photocatalytic Activity and Mechanism of Upconversion Nanoparticles/Anatase Phase of TiO<sub>2</sub> Aerogel</b> , Fu-Chih Li, Yoshitaka Kitamoto (Tokyo Institute of Technology, Japan)
<b>PO2-39</b>	<b>Demonstration of Motion Control of Micro ZrO<sub>2</sub> Particles in Uniform/Non-Uniform Electric Field</b> , Genki Onishi, Naoto Matsutani, Tadachika Nakayama, Tsuneo Suzuki, Hisayuki Suematsu, Koichi Niihara (Nagaoka University of Technology, Japan)

<b>PO2-40</b>	<b>Optical and Electrical Characteristics of ZnO Nanoparticle Electrode and Silica-Based Gel Type Solvents for Solid-State Electroluminescence Cells</b> , Buranid Dammai <sup>1</sup> , Somchai Arunrungrusmi <sup>1</sup> , Pakpoom Chansri <sup>1</sup> , Toshifumi Yuji <sup>2</sup> , Narong Mungkung <sup>1</sup> ( <sup>1</sup> King's Mongkut University of Technology Thonburi, Thailand, <sup>2</sup> University of Miyazaki, Japan)
<b>PO2-41</b>	<b>Effects of Sequential Ultraviolet and Thermal Treatment on Performances and Stability in High-Mobility ZnON TFT</b> , Hwan-Seok Jeong, Dae-Hwan Kim, Hyuck-In Kwon (Chung-Ang University, Japan)
<b>PO2-42</b>	<b>Influence of Moisture on the Electrical instability of Zinc Oxynitride Thin-Film Transistors</b> , Dae-Hwan Kim, Hwan-Seok Jeong, Hyuck-In Kwon (Chung-Ang University, Korea)
<b>PO2-43</b>	<b>Improved Heterodyne Terahertz Electro-Optic Sampling by Using DAST Crystal</b> , Hiroyuki Kato <sup>1</sup> , Hideaki Kitahara <sup>1</sup> , Daiki Goto <sup>1</sup> , Takuro Yasumoto <sup>1</sup> , Kohji Yamamoto <sup>1</sup> , Takashi Furuya <sup>1</sup> , Takashi Notake <sup>2</sup> , Hiroaki Minamide <sup>2</sup> , Michael Bakunov <sup>3</sup> , Masahiko Tani <sup>1</sup> ( <sup>1</sup> University of Fukui, Japan, <sup>2</sup> RIKEN, Japan, <sup>3</sup> University of Nizhny Novgorod, Russia )
<b>PO2-44</b>	<b>Investigation of Dye-Sensitized Solar Cell Used by MnO<sub>2</sub>:C Counter Electrode</b> , Noritsugu Kamata <sup>1</sup> , Pakpoom Chansri <sup>1</sup> , Somchai Arunrungrusmi <sup>1</sup> , Toshifumi Yuji <sup>2</sup> , Narong Mungkung <sup>1</sup> ( <sup>1</sup> King's Mongkut University of Technology Thonburi, Thailand, <sup>2</sup> University of Miyazaki, Japan)
<b>PO2-45</b>	<b>Time-Resolved Differential Transmissivity in CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> and CH<sub>3</sub>NH<sub>3</sub>Pb(I, Cl)<sub>3</sub> Thin Films</b> , Ryuichi Ito, Yuto Yamazaki, Takayuki Makino (University of Fukui, Japan)
<b>PO2-46</b>	<b>Fabrication of the Mechanism for Mixing Micro-Fluid by Using the Micro-Pump</b> , K. Moriya <sup>1</sup> , N. Matsutani <sup>1</sup> , Maria Guadalupe del Rocio Herrera Salazar <sup>2</sup> , H. Suematsu <sup>1</sup> , T. Nakayama <sup>1</sup> , T. Suzuki <sup>1</sup> , K. Niihara <sup>1</sup> ( <sup>1</sup> Nagaoka University of Technology, Japan, <sup>2</sup> Aarhus University, Denmark)
<b>PO2-47</b>	<b>Introduction of Ferroelectric Domain Walls into a BiFeO<sub>3</sub> Thin Film on a Vicinal SrTiO<sub>3</sub> (110) Substrate</b> , Yuta Kurokawa, Shota Seto, Seiji Nakashima, Hironori Fujisawa, Masaru Shimizu (University of Hyogo, Japan)
<b>PO2-48</b>	<b>Carrier Transport Mechanism in Realistic Operating Condition of p-Channel SnO Thin-Film Transistors</b> , Hee-Joong Kim, Sae-Young Hong, Chan-Yong Jeong, Sang-Dae Bae, Jeong-Hwan Lee, Hyuck-in Kwon (Chung-Ang University, Korea)
<b>PO2-49</b>	<b>Investigation on Bulk and Interface Trap Densities in p-type High-Mobility Tungsten Diselenide Thin-Film Transistors</b> , Hee-Joong Kim, Sae-Young Hong, Dae-Hwan Kim, Chan-Yong Jeong, Jeong-Hwan Lee, Hyuck-in Kwon (Chung-Ang University, Korea)
<b>PO2-50</b>	<b>Optical Properties of Vacuum Evaporated Metal Films on Moth-Eye Structure</b> , Kazunari Shinbo, Yu Tsumura, Chutiparn Lertvachirapaiboon, Yasuo Ohdaira, Akira Baba, Keizo Kato, Futao Kaneko (Niigata University, Japan)
<b>PO2-51</b>	<b>Effect of Argon Plasma Surface Treatment on the Physical and Chemical Properties of p-Type SnO Thin-Films for Thin-Film Transistor Applications</b> , Sang-Dae Bae, Soo-Hun Kwon, Hwan-Seok Jeong, Hyuck-In Kwon (Chung-Ang University, Korea)
<b>PO2-52</b>	<b>CO<sub>2</sub> Laser-Induced Breakdown Spectroscopy Applied to Cr Speciation Analysis Using Surfactant</b> , Takuya Matsumoto, Seiji Kitayama, Kazuma Takauchi, Kazuyoshi Kurihara (University of Fukui, Japan)
<b>PO2-53</b>	<b>Electrocatalytic Activity of Manganese Oxide Modified Carbon Nanotube Supported Platinum Based Catalysts for Ethanol Oxidation</b> , Chatchawan Panrod, Burapat Inceesungworn, Suwaphid Themsirimongkon, Paralee Weankeaw, Surin Saipanya (Chiang Mai University, Thailand)
<b>PO2-54</b>	<b>Electrochemical Deposition of ZnO/Magnetic-Metal Hybrid Core/Shell nanowires</b> , Huyen T. Pham, Dat Q. Tran, Md. Earul Islam, Masashi Akabori (Japan Advanced Institute of Science and Technology, Japan)

### Poster session 3 (June 21, 12:00 - 13:30)

<b>PO3-1</b>	<b>Effects of Element Addition to Perovskite-Type Photovoltaic Devices</b> , Takeo Oku, Yuya Ohishi, Atsushi Suzuki (University of Shiga Prefecture, Japan)
<b>PO3-2</b>	<b>Fabrication and Characterization of Perovskite Solar Cells with TiO<sub>2</sub> Nanoparticle layers</b> , Naoki Ueoka <sup>1</sup> , Takeo Oku <sup>1</sup> , Atsushi Suzuki <sup>1</sup> , Hiroki Sakamoto <sup>2</sup> , Masahiro Yamada <sup>2</sup> , Satoshi Minami <sup>3</sup> , Shinsuke Miyauchi <sup>3</sup> ( <sup>1</sup> University of Shiga Prefecture, Japan <sup>2</sup> Osaka Gas Co. Ltd., Japan <sup>3</sup> Osaka Gas Chemicals Co. Ltd., Japan)
<b>PO3-4</b>	<b>Passivation Effect of Ultra-Thin SiN<sub>x</sub> Films Formed by Cat-CVD for Crystalline Silicon Surfaces</b> , Hao Song, Keisuke Ohdaira (Japan Advanced Institute of Science and Technology, Japan )
	<b>(Withdrawn) Bipolar Resistive Switching of Ag-doped NiO-Based RRAM devices</b> , Chia-Hang Cheng, Hsien-Heng Tang, Ricky W. Chuang, Yan-Kuin Su, Thou-Jen Whang (National Cheng Kung University, Taiwan)
<b>PO3-6</b>	<b>Tin Monoxide-Based Gallium Nitride Heterostructure Field Effect Transistor (HFET)</b> , Cheng-Yu Hsieh, Ricky W. Chuang, Shyh-Jer Huang (National Cheng Kung University, Taiwan )
<b>PO3-7</b>	<b>Microstructure Analysis of Spherical Silicon Solar Cells with SnO<sub>x</sub>:F Anti-Reflection Films</b> , Takeo Oku <sup>1</sup> , Youichi Kanamori <sup>2</sup> , Mikio Murozono <sup>2</sup> ( <sup>1</sup> University of Shiga Prefecture, Japan <sup>2</sup> Clean Venture 21 Corp., Japan)
<b>PO3-8</b>	<b>Fabrication and Characterization of Cs-Doped Perovskite Solar Cells</b> , Naoki Ueoka, Takeo Oku, Atsushi Suzuki (University of Shiga Prefecture, Japan)
<b>PO3-9</b>	<b>Study on Comparison of Lamination Interfaces in Organic Light-Emitting Diodes</b> , Yuya Ozawa, Shigeki Naka, Hiroyuki Okada (University of Toyama, Japan)
<b>PO3-10</b>	<b>Oriented Thin Films of Mixture of a Low-Band-Gap Polymer and a Fullerene Derivative Prepared by Friction Transfer Method</b> , Nobutaka Tanigaki <sup>1</sup> , Toshiko Mizokuro <sup>1</sup> , Tetsuhiko Miyadera <sup>1</sup> , Yousei Shibata <sup>1</sup> , Tomoyuki Koganezawa <sup>2</sup> ( <sup>1</sup> National Institute of Advanced Industrial Science and Technology, Japan, <sup>2</sup> Japan Synchrotron Radiation Research Institute, Japan)
<b>PO3-11</b>	<b>Growth of Heavily Nitrogen-Doped Diamond Films</b> , Shinji Ikeda, Tsubasa Matsumoto, Tokuda Norio, Takao Inokuma (Kanazawa University, Japan)
<b>PO3-12</b>	<b>Influence of Al/Cu-doped ZnO on Energy Level Variations Fabricated by Sol-Gel Synthesis Methods</b> , Leo Chau-Kuang Liao, Yi-Chen Yang (Yuan Ze University, Taiwan)
	<b>(Withdrawn) Air-Processed Semitransparent Organic Solar Cells with Tunable Color</b> , Shunjiro Fujii, Yuki Kuwahara, Takeshi Saito (National Institute of Advanced Industrial Science and Technology, Japan)
<b>PO3-14</b>	<b>Fabrication of Ferroelectric Nanowire Capacitors by MOCVD</b> , Yohei Takeuchi, Hironori Fujisawa, Masaru Shimizu, Seiji Nakashima (University of Hyogo, Japan)
<b>PO3-15</b>	<b>Rubrene-Based Ultra-Thin Organic Light-Emitting Diodes</b> , Takumu Koike, Shigeki Naka, Hiroyuki Okada (University of Toyama, Japan)
<b>PO3-16</b>	<b>Evaluation of Electron Injection at Oxide Electrode/Organic Layer Interface Using Polyethylenimine-Ethoxylated as Electron Injector</b> , Taishi Yoshida, Shigeki Naka, Hiroyuki Okada ( University Toyama, Japan)
<b>PO3-17</b>	<b>Electronic Structures in Oxide- and Halide-Based Natural Superlattice Structures</b> , Takahiro Watanabe, Takayuki Makino (University of Fukui, Japan)
<b>PO3-18</b>	<b>Electrochemical Determination of Caffeic Acid in Beverages Using MWCNT/PEDOT:PSS-Modified Electrodes</b> , Kulrisa Kuntamung, Padchanee Sangthong, Jaroon Jakmunee, Kontad Ounnunkad (Chiang Mai University, Thailand )
<b>PO3-19</b>	<b>Change of Phase Transition Temperature on the Bismuth Titanate with Various Doping Ratio Measured by Dielectric Measurement</b> , Tang Rui, Chung Wung Bark (Gachon University, Korea)

<b>PO3-20</b>	<b>Ar/O<sub>2</sub> Flow Ratio Dependence for Hf<sub>1-x</sub>Zr<sub>x</sub>O<sub>2</sub> Ferroelectric Thin Films Deposited by RF Magnetron Sputtering</b> , J. J. Liao <sup>1,2</sup> , Q. X. Peng <sup>2</sup> , Y. C. Zhou <sup>2</sup> , S. Ohmi <sup>1</sup> ( <sup>1</sup> Tokyo Institute of Technology, Japan, <sup>2</sup> Xiangtan University, China)
<b>PO3-21</b>	<b>The Electronic Planting Technology Utilizing Solar Power Generation and Inorganic Material have an Influence on Plant Growth</b> , Atsuko Fukuyama <sup>1</sup> , Kazuhisa Hasegawa <sup>2</sup> , Teruo Hori <sup>1</sup> , Masaaki Kuzuhara <sup>1</sup> , Susumu Yonezawa <sup>1</sup> , Keely Brandon <sup>3</sup> , Yoshiyuki Masumura <sup>4</sup> , Daisuke Mori <sup>4</sup> , Hiroshi Kanamaru <sup>4</sup> ( <sup>1</sup> University of Fukui, Japan, <sup>2</sup> Ishikawa Prefectural University, Japan, <sup>3</sup> OIST, Japan, <sup>4</sup> Nihon Shinko Co. Ltd., Japan)
<b>PO3-22</b>	<b>Characteristics of X-ray-Induced Absorption in Various Types of Silica Glasses</b> , Hiroki Sakakibara <sup>1</sup> , Nobu Kuzuu <sup>1</sup> , Naoya Sato <sup>1</sup> , Hideharu Horikoshi <sup>2</sup> , Yu Arakawa <sup>1</sup> ( <sup>1</sup> University of Fukui, Japan, <sup>2</sup> Tosoh SGM Corp., Japan)
<b>PO3-23</b>	<b>Effect of Metal Oxides on Graphene Oxide Support for Methanol Oxidation</b> , Supannisa Rattanakansang, Burapat Inceesungvorn, Surin Saipanya, Paralee Waenkaew (Chiang Mai University, Thailand)
<b>PO3-24</b>	<b>Analysis of THz Plasmonic Superfocusing Mode in Metallic V-Groove Tapered Waveguides</b> , Kiwamu Kusama <sup>1</sup> , Kazuyoshi Kurihara <sup>1</sup> , Fumiyoshi Kuwashima <sup>2</sup> , Osamu Morikawa <sup>3</sup> , Kohji Yamamoto <sup>1</sup> , Masahiko Tani <sup>1</sup> ( <sup>1</sup> University of Fukui, Japan, <sup>2</sup> Fukui University of Technology, Japan, <sup>3</sup> Japan Coast Guard Academy, Japan)
<b>PO3-25</b>	<b>Increase in Photo-Voltage of Inverted Polymer Solar Cells by Applying Forward Bias under UV-Cut Light Irradiation</b> , Takayuki Kuwabara, Takuji Kusumi, Makoto Karakawa, Tetsuya Taima, Kohshin Takahashi (Kanazawa University, Japan)
<b>PO3-26</b>	<b>Experimental Analysis of Pixel-Shrinkage in Organic Light-Emitting Diodes</b> , Takuma Tanabe <sup>1</sup> , Eiki Kondo <sup>1</sup> , Munehiro Kimura <sup>2</sup> , Masahiro Minagawa <sup>1</sup> ( <sup>1</sup> National Institute of Technology, Nagaoka College, Japan, <sup>2</sup> Nagaoka University of Technology, Japan)
<b>PO3-27</b>	<b>Thermal Conductivity in Suspended h-BN Flake of Variable Shapes</b> , Muhaiminul Islam, Imam-Ul-Ferdous, Ashraful Ghani Bhuiyan, Md. Sherajul Islam (Khulna University of Engineering and Technology, Bangladesh)
<b>PO3-28</b>	<b>Temperature Induced Anomalous Photoluminescence of Hybrid Organometal Halide (CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub>) Perovskite</b> , Md. Masud Rana <sup>1,2</sup> , Md. Sherajul Islam <sup>2</sup> , Ashraful G. Bhuiyan <sup>2</sup> , Takayuki Makino <sup>3</sup> ( <sup>1</sup> Jessore University of Science and Technology, Bangladesh, <sup>2</sup> Khulna University of Engineering and Technology, Bangladesh, <sup>3</sup> University of Fukui, Japan)
<b>PO3-29</b>	<b>Micropatterning of BiFeO<sub>3</sub> Films by Electron-Beam-Induced Reaction Process</b> , Tadashi Fujii, Osamu Furukawa, Syunsuke Ebi, Tomoaki Karaki (Toyama Prefectural University, Japan)
<b>PO3-30</b>	<b>Selective Detection of Fe<sup>3+</sup> Ions by Dopamine Functionalized Carbon Dots</b> , Peng Shasha, Dal Ho Lee, Sang Joon Park (Gachon University, Korea)
<b>PO3-31</b>	<b>Chemical Hole Doping into Atomically Thin Materials Using Boron-Based Oxidant</b> , Hirofumi Matsuoka <sup>1</sup> , Kaito Kanahashi <sup>2</sup> , Naoki Tanaka <sup>3</sup> , Yoshiaki Shoji <sup>3</sup> , Masatou Ishihara <sup>4</sup> , Masataka Hasegawa <sup>4</sup> , Lain-Jong Li <sup>5</sup> , Jiang Pu <sup>2</sup> , Hiroshi Ito <sup>1</sup> , Takanori Fukushima <sup>3</sup> , Taishi Takenobu <sup>1,2</sup> ( <sup>1</sup> Nagoya University, Japan, <sup>2</sup> Waseda University, Japan, <sup>3</sup> Tokyo Institute of Technology, Japan, <sup>4</sup> National Institute of Advanced Industrial Science and Technology, Japan, <sup>5</sup> King Abdullah University of Science and Technology, Saudi Arabia)
<b>PO3-32</b>	<b>ESR Observations of Charge Carrier Dynamics in Semicrystalline Conducting Polymers</b> , Shinya Kawamura, Ayato Wakamatsu, Hisaaki Tanaka, Taishi Takenobu (Nagoya University, Japan)
<b>PO3-33</b>	<b>Fabrication and Characterization of Diamond MOS Diodes Using SiON Films</b> , Ryosuke Mikuni, Akihiro Inoue, Tsubasa Matumoto, Norio Tokuda, Takao Inokuma (Kanazawa University, Japan)

<b>PO3-34</b>	<b>Characteristics of NdNiO<sub>3</sub> Synthesized in the Ambient of Oxygen Gas by Using Solid State Reaction Method</b> , Sangmo Kim, Tang Rui, Nguyen Thi Nguyen, Chung Wung Bark (Gachon University, Korea)
<b>PO3-35</b>	<b>Preparation of Titanium Dioxide Films with Various Crystal Structures Fabricated by Off-Axis RF Sputtering for Compact Layers of Solar Cells</b> , Sangmo Kim, Tang Rui, Nguyen Thi Nguyen, Chung Wung Bark (Gachon University, Korea)
<b>PO3-36</b>	<b>Microstructure Analysis of Perovskite CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Solar Cells Based on X-Ray Diffraction Measurements</b> , Yuji Ando, Takeo Oku (University of Shiga Prefecture, Japan)
<b>PO3-37</b>	<b>High Growth Rate (<math>\geq 0.3</math> mm/h) of Homoepitaxial Diamond (100) Films by Microwave Plasma CVD</b> , Koichi Ito <sup>1</sup> , Shunsuke Watanabe <sup>1</sup> , Tsubasa Matsumoto <sup>1</sup> , Osamu Ariyada <sup>2</sup> , Norio Tokuda <sup>1</sup> , Takao Inokuma <sup>1</sup> ( <sup>1</sup> Kanazawa University, Japan, <sup>2</sup> Arios Inc., Japan)
<b>PO3-38</b>	<b>Long-Term Potential-Induced Degradation Tests for n-Type c-Si-Wafer-Based Photovoltaic Cell Modules</b> , Yutaka Komatsu <sup>1</sup> , Seira Yamaguchi <sup>1</sup> , Atsushi Masuda <sup>2</sup> , Keisuke Ohdaira <sup>1</sup> ( <sup>1</sup> Japan Advanced Institute of Science and Technology, Japan, <sup>2</sup> National Institute of Advanced Industrial Science and Technology, Japan)
<b>PO3-39</b>	<b>Characterization of a Compact SiC Photovoltaic Inverter Equipped with Spherical Si Solar Cells</b> , Yuji Ando <sup>1</sup> , Takeo Oku <sup>1</sup> , Masashi Yasuda <sup>1</sup> , Kazufumi Ushijima <sup>2</sup> , Mikio Murozono <sup>3</sup> ( <sup>1</sup> University of Shiga Prefecture, Japan, <sup>2</sup> U-Design, Japan, <sup>3</sup> Clean Venture 21 Corp., Japan)
<b>PO3-40</b>	<b>Losses Investigating of the Si Optical Slab Waveguide</b> , Wildan Panji Tresna <sup>1,2</sup> , Ryohei Tsurita <sup>1</sup> , Takeo Maruyama <sup>1</sup> ( <sup>1</sup> Kanazawa University, Japan, <sup>2</sup> Indonesian Institute of Sciences, Indonesia)
<b>PO3-41</b>	<b>Influence of H<sub>2</sub>O and OH Groups for Devitrification of Silica Glass</b> , Naohiro Horii <sup>1</sup> , Nobu Kuzuu <sup>2</sup> , Naoya Sato <sup>2</sup> , Hideharu Horikoshi <sup>3</sup> , Masahiro Ikeda <sup>4</sup> , Masaru Aniya <sup>5</sup> ( <sup>1</sup> National Institute of Technology, Fukui College, Japan, <sup>2</sup> University of Fukui, Japan, <sup>3</sup> Tosoh SGM Corp., Japan, <sup>4</sup> National Institute of Technology, Oita College, Japan, <sup>5</sup> Kumamoto University, Japan)
<b>PO3-42</b>	<b>Au Thin Film Formed from Au Nano-Particle Dispersed Water Solution Prepared by Solution Plasma Processing for SERS Spectroscopy</b> , Naoki Matsuda, Hiroataka Okabe (National Institute of Advanced Industrial Science and Technology, Japan)
<b>PO3-43</b>	<b>Dipolar Magnetism and Electrostatic Repulsion of Colloidal Interacting-Nanoparticle System</b> , Suko Bagus Trisnanto, Yoshitaka Kitamoto (Tokyo Institute of Technology, Japan)
<b>PO3-44</b>	<b>Fabrication of Caffeine Imprinted Conducting Polymeric Films via Unconventional Colloidal Lithography and Electropolymerization</b> , Seonho Kong, Jin Young Park (Kyungpook National University, Korea)
<b>PO3-45</b>	<b>A Control System of Normalization for Photoreflectance Optical Intensity with Microcomputer</b> , Eiichi Kobayashi, Takayuki Makino, Akihiro Hashimoto (University of Fukui, Japan)
<b>PO3-46</b>	<b>Formation of Defect-Free Diamond (100) Surface by Anisotropic Etching of Solid-Solution Reaction of Carbon Into Nickel</b> , Taira Tabakoya, Kazuhiro Nakanishi, Masatsugu Nagai, Yutaro Katagiri, Tsubasa Matsumoto, Norio Tokuda, Takao Inokuma (Kanazawa University, Japan)
<b>PO3-47</b>	<b>Direct Imprinting of Oxide Precursor Gel for New Fabrication Process of Thin Film Transistors</b> , Ken-ichi Haga, Yuusuke Kamiya, Eisuke Tokumitsu (Japan Advanced Institute of Science and Technology, Japan)
<b>PO3-48</b>	<b>Effect of Substrate Thermal Resistivity on Breakdown Voltage of AlGaIn/GaN HEMTs</b> , Taisei Yamazaki, Joel T. Asubar, Hirokuni Tokuda, Masaaki Kuzuhara (University of Fukui, Japan)
<b>PO3-49</b>	<b>Enhancement of Resistive Switching Behaviour and Ferromagnetism in (Al, N)-Codoped ZnO Memory Device</b> , Sih-Sian Li <sup>1</sup> , Yan-Kuin Su <sup>1</sup> , Yu-Min Hu <sup>2</sup> ( <sup>1</sup> National Cheng Kung University, Taiwan, <sup>2</sup> National University of Kaohsiung, Taiwan)

<b>PO3-50</b>	<b>Investigation of Dynamic On-Resistance of Multi-Mesa-Channel AlGaIn/GaN HEMTs,</b> Joel T. Asubar <sup>1</sup> , Hirokuni Tokuda <sup>1</sup> , Tamotsu Hashizume <sup>2</sup> , Masaaki Kuzuhara <sup>1</sup> ( <sup>1</sup> University of Fukui, Japan, <sup>2</sup> Hokkaido University, Japan)
<b>PO3-51</b>	<b>Fabrication of SnS Thin-Film Solar Cells via Co-Evaporation Method,</b> Aimi Yago <sup>1</sup> , Takashi Kibishi <sup>1</sup> , Yoji Akaki <sup>2</sup> , Shigeyuki Nakamura <sup>3</sup> , Hiroto Oomae <sup>4</sup> , Hironori Katagiri <sup>1</sup> , Hideaki Araki <sup>1</sup> ( <sup>1</sup> NIT, Nagaoka College, Japan, <sup>2</sup> NIT, Miyakonojo College, Japan, <sup>3</sup> NIT, Tsuyama College, Japan, <sup>4</sup> NIT, Kushiro College, Japan)
<b>PO3-52</b>	<b>Oxide Layer Growth at the Surface of Tungsten and Consequences on Hydrogen Transfer Processes,</b> Abdelouahab El Kharbachi <sup>1,2</sup> , Loïc Marchetti <sup>3</sup> , Frédéric Miserque <sup>3</sup> , Bernard Rousseau <sup>1</sup> ( <sup>1</sup> CEA, SCBM, Laboratoire de Marquage par le Tritium, France, <sup>2</sup> Institute for Energy Technology, Norway, <sup>3</sup> CEA, DEN/DPC, Laboratoire d'Étude de la Corrosion Aqueuse, France)
<b>PO3-53</b>	<b>High-Efficiency Perovskite Solar Cells with Enhanced UV Light Stability Based on Nanosized Particles as Ferroelectric Absorber Layer,</b> Nguyen Thi Nguyen, Rui Tang, Seong Gwan Shin, Sangmo Kim, Hyung Wook Choi and Chung Wung Bark (Gachon University, Korea)