

Program

November 18, 2024

16:00 – 18:00 Registration / Welcome Reception

November 19, 2024

08:30 – 09:00 Registration

09:00 – 09:20 Opening Remarks

Hiroyoshi Naito (Osaka Metropolitan University)

Chair: Gang LI (The Hong Kong Polytechnic University)

09:20 – 09:40 Development of Organic Semiconducting Materials for Organic Solar Cell

\*YunHi Kim (Gyeongsang National University, RIMA)

09:40 – 10:00 Development of C-Shaped *ortho*-Benzodipyrrole-based A-D-A type Nonfullerene Acceptors for High-Performance Organic Photovoltaics and Air-Stable, High-Electron-Mobility Transistors

\*Yen-Ju Cheng (National Yang Ming Chiao Tung University)

10:00 – 10:20 Development of  $\pi$ -Conjugated Polymers for Efficient Organic Photovoltaics

\*Itaru Osaka (Hiroshima University)

10:20 – 11:00 **Plenary**) Green-Processable Semiconducting Polymers for Photovoltaics

\*Taiho PARK (Pohang University of Science and Technology)

11:00 – 11:20 Coffee Break

Chair: Le Yang (Institute of Materials Research & Engineering)

11:20 – 11:40 Narrowband Tetradentate Pt(II) Emitters for High-Performance Deep-Blue Phosphorescent OLEDs

\*Guijie Li (Zhejiang University of Technology)

11:40 – 12:00 Can Iridium(III) Carbene Complexes Be the Durable Blue OLED Phosphors?

\*Yun CHI, Jie Yan (City University of Hong Kong)

12:00 – 12:20 Electroluminescent Clusters: Filling the Gap

\*Hui Xu, Jianan Sun (Heilongjiang University)

12:20 – 13:40 Lunch

Chair: Takashi Nagase (Osaka Metropolitan University)

13:40 – 14:20 **Featured Invited Talk**) Insights into Scientific Writing and Publishing

\*Natalie Lok Kwan Li (Nature Communications)

14:20 – 14:40 Non-Volatile Floating-Gate Photomemory with Ultrafast and Multi-Level Memory Behavior

\*Jung-Yao Chen (National Cheng Kung University)

14:40 – 15:00 Organic Single Crystal Growth by Naphthalene Flux Method and FET Characteristics

\*Toshihiro Shimada<sup>1</sup>, Seiya Yokokura<sup>1</sup>, Takashi Yanase<sup>2</sup> (1. Hokkaido University, 2. Toho University)

15:00 – 15:20 Coffee Break

- Chair: Seok-In Na (Jeonbuk National University)
- 15:20 – 15:40 Characteristics of Bifacial perovskite solar cells under various albedo conditions  
\*Chao-Yu Peter Chen<sup>1,2,3</sup>, Ming-Xun Jiang<sup>1</sup>, Chen-Fu Lin<sup>1</sup> (1. Dept. Photonics, National Cheng Kung University, Tainan, Taiwan, 2. Hierarchical Green-Energy Materials (Hi-GEM) Research Center, National Cheng Kung University, Tainan, Taiwan, 3. Program on Key Materials, Academy of Innovative Semiconductor and Sustainable Manufacturing, National Cheng Kung University, Tainan, Taiwan)
- 15:40 – 16:00 Methylamine Post Treatment: Is it the Holy Grail of Large Area Perovskite Thin Film Fabrication?  
\*Tzu Chien Wei<sup>1,2</sup> (1. National Tsing-Hua University, 2. Academia Sinica)
- 16:00 – 16:20 Enhancing Stability in Halide Perovskite Photovoltaics Through Interface Optimization via ZOOM  
\*Zonglong Zhu (Department of Chemistry, City University of Hong Kong)
- 16:20 – 16:40 Fabrication of highly efficient perovskite solar cells in high humidity air  
\*Lixin Xiao (Peking University)
- 16:40 – 17:00 Coffee Break
- Chair: Furong Zhu (Hong Kong Baptist University)
- 17:00 – 17:20 Developing Gas Sensing Technology for Detecting Agricultural Nitrogen Pollution  
\*Hsiao-Wen Zan<sup>1,2</sup>, Chih-Lu Chiang<sup>2</sup>, Yu-Yu Huang<sup>3</sup>, Li-Yin Chen<sup>1</sup>, Hsin-Fei Meng<sup>4</sup> (1. Department of Photonics, National Yang Ming Chiao Tung Univ. (NYCU), Taiwan, 2. Institute of Pioneer Semiconductor Innovation, National Yang Ming Chiao Tung Univ., Taiwan, 3. Taiwan Agriculture Research Institute, Ministry of Agriculture, Executive Yuan, Taiwan, 4. Institute of Physics, National Yang Ming Chiao Tung Univ., Taiwan)
- 17:20 – 17:40 Enhancing Organic Semiconductor-Based Gas Sensors for Low Hardware Demand Applications  
\*Li-Yin Chen<sup>1</sup>, Hsiao-Wen Zan<sup>1</sup>, Hsin-Fei Meng<sup>2</sup> (1. Department of Photonics, National Yang Ming Chiao Tung University, 2. Institute of Physics, National Yang Ming Chiao Tung University)
- 17:40 – 18:00 Fabrication of Polymeric Grating Prism-based Dual-mode Miniature Surface Plasmon Resonance Sensor  
\*Akira Baba<sup>1</sup>, Wisansaya Jaikandee<sup>1</sup>, Chutiparn Lertvachirapaiboon<sup>2</sup>, Kazunari Shinbo<sup>1</sup>, Keizo Kato<sup>1</sup>, Sanong Ekgasit<sup>3</sup> (1. Niigata University, 2. National Nanotechnology Center (NANOTEC), National Science and Technology Development Agency, 3. Chulalongkorn University)

November 20, 2024

- Chair: Bo Ram Lee (Sungkyunkwan University)
- 09:00 – 09:20 High-Performance Solar Cells Based on Low Bandgap Organic Perovskite Quantum Dots  
\*Sung-Yeon Jang (Ulsan National Institute of Science and Technology (UNIST))
- 09:20 – 09:40 Novel Organic Moieties for Functional Halide Perovskites and Their Devices  
\*Hao-Wu Lin (National Tsing Hua University)
- 09:40 – 10:00 Perovskite Ink Engineering for Slot-die Coating Based Photovoltaics  
\*Seok-In Na (Professional Graduate School of Flexible and Printable Electronics, Department of Flexible and Printable Electronics, Jeonbuk National University)
- 10:00 – 10:40 **Plenary**) Scalable fabrication of perovskite solar cells via magnetron sputtering  
\*Dechun Zou (Peking University)
- 10:40– 11:00 Coffee Break

- Chair: Hui Xu (Heilongjiang University)
- 11:00-11:20 Methyl Effect of Thermally Activated Delayed Fluorescent Emitters on Blue Organic Light-emitting Diodes  
\*Chin-Yiu Chan (City University of Hong Kong)
- 11:20 – 11:40 Heavy-atom Effect Promotes Multi-Resonance TADF Emitters  
\*Chuluo Yang, Yuxuan Hu, Jingsheng Miao, Xiaosong Cao (Shenzhen University)
- 11:40 – 12:00 Highly efficient invisible electroluminescence from organic light-emitting diodes  
\*Hajime Nakanotani (Center for Organic Photonics and Electronics Research (OPERA), Kyushu University)
- 12:00 – 12:20 Utilization of Thermally Stimulated Delayed Fluorescence in Organic Scintillators  
\*Masanori Koshimizu<sup>1</sup>, Yuichi Kitamoto<sup>2</sup>, Taiyo Kanenari<sup>1</sup>, Atsushi Sato<sup>2</sup>, Tetsutaro Hattori<sup>2</sup>, Shuichi Oi<sup>2</sup>, Takayuki Yanagida<sup>3</sup>, Yutaka Fujimoto<sup>2</sup>, Keisuke Asai<sup>2</sup> (1. Shizuoka University, 2. Tohoku University, 3. Nara Institute of Science and Technology)
- 12:20 – 13:40 Lunch
- Chair: Toshihiro Shimada (Hokkaido University)
- 13:40 – 14:20 **Plenary**) Organic Thermoelectric Device Utilizing CT Interface as Charge Generation by Harvesting Thermal Energy  
\*Chihaya Adachi (Center for Organic Photonics and Electronics Research (OPERA), Kyushu University)
- 14:20 – 14:40 Organic/Hybrid Thermoelectric Materials and Devices  
\*Cheng-Liang Liu (National Taiwan University)
- 14:40 – 15:00 Giant Seebeck Effect > 0.1 V/K in Organic/Polymer Semiconductors  
\*Masakazu Nakamura (Nara Institute of Science and Technology )
- 15:00 – 15:20 Coffee Break
- Chair: Li-Yin Chen (National Yang Ming Chiao Tung University)
- 15:20 – 15:40 Bio-Inspired Micro/Nanostructures for Skin-like Sensors  
\*Hyunhyub Ko (Ulsan National Institute of Science and Technology)
- 15:40 – 16:00 Biosensors based on flexible organic electrochemical transistors  
\*Feng YAN (The Hong Kong Polytechnic University)
- 16:00 – 16:20 A Monolithic Organic Tactile Synapse Using Piezo-Ionics for Neuro-Robotics  
\*Do Hwan Kim (Hanyang University)
- 16:20 – 16:40 Coffee Break
- Chair: Itaru Osaka (Hiroshima University)
- 16:40 – 17:00 Theoretical insight into how to reduce non-radiative voltage loss in organic solar cells  
\*Xiankai Chen (Soochow University)
- 17:00 – 17:20 Development of large-area organic photovoltaics by control of nanoscale morphology  
\*Hae Jung Son (Korea Institute of Science and Technology)
- 17:20 – 17:40 Organic Solar Cells towards Performance and Applications  
\*Gang Li (Hong Kong Polytechnic University)
- 17:40 – 18:00 Improving Thermal/Photo/Underwater-Stability of Polymer Solar Cells by Interface Engineering  
\*Chu-Chen Chueh (National Taiwan University)
- 18:30 – 20:30 Poster session

- Chair: Jianxin Tang (Macau University of Science and Technology)
- 09:00 – 09:20 Bipolar Metal Oxide Carrier Transport Layers for Efficient Perovskite Solar Cells  
\*Chih Wei Chu, Mriganka Singh, Anjali Thakran ( Academia Sinica)
- 09:20 – 09:40 Organic host blend perovskite nanocrystal light-emitting diodes  
\*Takayuki Chiba (Yamagata University)
- 09:40 – 10:00 Passivation Strategies for Mitigating Defect Challenges in Halide Perovskite Light-Emitting Diodes  
\*Bo Ram Lee (Sungkyunkwan University)
- 10:00 – 10:40 **Plenary**) Printable Organic and Perovskite Solar Cells for Clean Energy  
\*Alex K-Y. Jen (Dept. of Materials Science & Engineering, City University of Hong Kong)
- 10:40 – 11:00 Coffee Break
- Chair: Hao-Wu Lin (National Tsing Hua University)
- 11:00 – 11:20 Design of Electroactive Polymers with High Mechanical Properties for Intrinsically-Stretchable Electronics  
\*Bumjoon Kim (KAIST)
- 11:20 – 11:40 Design and synthesis of stretchable and self-healing polymers for hybrid human-motion sensing and energy harvesting  
\*Ho-Hsiu Chou (Department of Chemical Engineering, National Tsing Hua University)
- 11:40 – 12:00 Mechanical deformability and charge transport of organic semiconductors for stretchable electronics  
\*Kilwon Cho (Pohang University of Science and Technology)
- 12:00 – 12:20 Toward high definition and highly efficient quantum dot light-emitting diodes with deformable formfactors  
\*Moon Kee Choi (Ulsan National Institute of Science & Technology)
- 12:20 – 13:40 Lunch
- Chair: Lixin Xiao (Peking University)
- 13:40 – 14:20 **Plenary**) A review in the initial development of p-i-n configuration and NiO<sub>x</sub> electrode interlayer in organolead halide perovskite solar cells  
\*Tzung-Fang Guo<sup>1,2</sup>, Peter Chen<sup>1</sup>, Wei-Chih Lai<sup>1</sup> (1. Department of Photonics, National Cheng Kung University, Taiwan, 2. Research Center of Applied Sciences, Research Center of Critical Issues, Academia Sinica, Taiwan)
- 14:20 – 14:40 Synergetic Interface Engineering on Blue Perovskite Light-Emitting Diodes  
\*Jianxin Tang (Macau University of Science and Technology)
- 14:40 – 15:00 Phase management for pure red perovskite light-emitting diodes  
\*Chuanjiang Qin (Changchun Institute of Applied Chemistry, Chinese Academy of Sciences)
- 15:00 – 15:20 Coffee Break
- Chair: Yi-Ting Lee (Soochow University)
- 15:20 – 15:40 Inverted Singlet and Triplet Materials for Organic Light-Emitting Diodes  
\*Naoya Aizawa (Osaka University)
- 15:40 – 16:00 The Origin of the Inverted Singlet and Triplet Excited States of Azaphenylene Molecules  
\*Yong-Jin Pu (RIKEN Center for Emergent Matter Science (CEMS))
- 16:00 – 16:20 Near-Infrared Luminescent Radical Materials and Devices  
\*Feng Li (State Key Laboratory of Supramolecular Structure and Materials, Chemistry College, Jilin University)
- 16:20 – 16:40 Spontaneous orientation polarization of fluoroalkyl-based polar molecules  
\*Masaki Tanaka (Tokyo University of Agriculture and Technology)
- 16:40 – 17:00 Coffee Break

- Chair: Chuluo Yang (Shenzhen University)
- 17:00 – 17:20 Triplet-triplet annihilation strategies in photon-upconversion and OLEDs  
\*Le Yang (Institute of Materials Research and Engineering (IMRE), ASTAR)
- 17:20 – 17:40 Upconversion Emission for Blue Organic Light-Emitting Diode  
\*Seiichiro Izawa (Institute of Science Tokyo)
- 17:40 – 18:00 Pyrene-Based Triplet-Triplet Annihilation Hosts with Enhanced Horizontal Orientation for Organic Light-Emitting Diodes  
\*Yi-Ting Lee, Chiao-En Li, Ya-Lei Hu (Department of Chemistry, Soochow University, Taipei)
- 19:00 – 21:00 Conference Banquet

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- Chair: Cheng-Liang Liu (National Taiwan University)
- 09:00 – 09:20 Blue-Emissive Quantum Dots: From Material Synthesis to Device Applications  
\*Haizheng Zhong (Beijing Institute of Technology)
- 09:20 – 09:40 Highly Efficient Color Conversion Materials Using Organic Nano-dots  
\*Jang Hyuk Kwon, Rasheeda Ansari (Organic Optoelectronic Device Lab (OODL), Department of Information Display, Kyung Hee University, Seoul)
- 09:40 – 10:00 Highly Horizontal Oriented Exciplex Host for High-Performance Eye-Protection White Organic Light-Emitting Diodes  
Denghui Liu, Mengke Li, \*Shi-Jian Su (South China University of Technology)
- 10:00 – 10:20 Molecular Level Understanding of OLEDs based on Quantum Chemical Calculations, Multiscale Simulations, and NMR  
\*Hironori Kaji (Kyoto Univ.)
- 10:20 – 11:00 **Plenary**) Organic LEDs: Where we go  
\*Junji Kido (Yamagata University)
- 11:00 – 11:20 Coffee Break
- Chair: Chih-Wei Chu (Academia Sinica)
- 11:20 – 11:40 Organic Functional Electronics: Advancing Imaging Technologies for Invisible Light Detection  
\*Shun-Wei Liu (Ming Chi University of Technology)
- 11:40 – 12:00 Seeing the Unseen – NIR Organic Photodetectors for Application in Non-Intrusive Detection  
\*Furong Zhu (Hong Kong Baptist University)
- 12:00 – 12:20 Vertically Phase Separated Photomultiplication Organic Photodetectors with Ultrafast Dynamic Characteristics  
\*Han Young Woo (Korea University)
- 12:20 – 12:40 Closing Ceremony
- 13:30-18:00 Conference Excursion

- p1 Efficient Blue Electroluminescence and Hyperphosphorescence Generated from Durable Iridium(III) Carbene Complexes  
\*Jie Yan, Yun Chi ( City University of Hong Kong)
- p2 Efficient and stable white OLEDs by harmonization of rapid triplet up-conversion and singlet radiation  
\*Manli Huang, Chuluo Yang (Shenzhen University)
- p3 One-Shot Synthesis of 1,4-BN-Doped Polycyclic Aromatic Hydrocarbons as Narrowband Organic Emitters  
\*Zhongyan Huang, Chuluo Yang (Shenzhen University)
- p4 Ir(III) Metal Emitters with Cyano-Modified Imidazo[4,5-b]pyridin-2-ylidene Chelates for Deep-Blue Organic Light-Emitting Diodes  
\*Yixin WU (City University of Hong Kong)
- p5 Tetradentate Pt(II) Complexes Based on Xylenylamino Linked Dual Pyrazolate Chelates for Organic Light Emitting Diodes  
\*Fan ZHOU, Yun CHI (Department of Materials Science and Engineering, City University of Hong Kong)
- p6 Optimization of Red TADF Emitters for OLED Applications Using D-A1-A2 Molecular Design  
\*Cai-Fan Lo<sup>1</sup>, Yi-Ting Chen<sup>1</sup>, Chih-Hao Chang<sup>1</sup>, Yun-Tzu Tseng<sup>2</sup>, Yu-Ting Lin<sup>2</sup>, Yuan Jay Chang<sup>2</sup> (1. Department of Electrical Engineering, Yuan Ze University, 2. Department of Chemistry, Tunghai University)
- p7 Exciplex Formation: Synthesis, Photophysical Properties, and Electroluminescence  
\*Chih-Hung Ko<sup>1</sup>, Kuan-Yu Su<sup>1</sup>, Chih-Hao Chang<sup>1</sup>, Yu-Ru Yang<sup>2</sup>, Chin-Wei Lu<sup>2</sup> (1. Department of Electrical Engineering, Yuan Ze University, 2. Department of Applied Chemistry, Providence University)
- p8 Direct observation of hole injection processes in quantum dot layers by spectroscopic techniques  
\*Minayo Kido<sup>1</sup>, Katsuichi Kanemoto<sup>1,2</sup> (1. Osaka Metropolitan University, 2. NITEP)
- p9 Narrow-Band Deep Blue Emission in Organic Light-Emitting Diode at Ultra-Low Driving Voltage  
\*QINGJUN SHUI<sup>1</sup>, Yutaka Majima<sup>1</sup>, Seiichiro Izawa<sup>1,2</sup> (1. Laboratory for Materials and Structures, Tokyo Institute of Technology, 2. JST PRESTO)
- p10 Application of Nanostructured Parylene-C Films for Controlling External and Internal Light in Organic Light-Emitting Diodes  
\*Hyun Bin Kim, Jae Yong Park, Eun Jeong Jang, Seonghwan An, Dong Jun Kim, Sungmin Kwon, Jonghee Lee, Jae Hyun Lee (Hanbat National Univ.)
- p11 Molecular design approach for pure-green multiple resonance TADF emitters  
\*Eojin Jeon, Nisha Vergineya, Jang Hyuk Kwon (Kyunghee University)
- p12 A Heptazine-Carbazole Derivative for Efficient Sky-Blue Organic Light-Emitting Diodes  
\*Rai Shimono, Naoya Aizawa, Mitsuharu Suzuki, Ken-ichi Nakayama (Osaka University )
- p13 Iridium(III) phosphors-bearing symmetric imidazo-quinoxaline chelates for blue electrophosphorescence OLED devices  
\*Junyao ZHANG, Yun Chi (City University of Hong Kong)
- p14 Pt (II) containing blue emitter bearing a dicarbene chelate  
\*Guowei Ni, Yun Chi (City University of Hong Kong)

- p15 Intramolecular Locking Effect in Triplet-Harvesting Multifunctional Organic Emitters for Non-Doped OLEDs  
\*Taehyun Kim, Tahiho Park (Pohang University of Science and Technology (POSTECH))
- p16 Clarify the cathode degradation in CH<sub>3</sub>NH<sub>3</sub>PbBr<sub>3</sub> perovskite light-emitting diodes  
\*Thi-Hoai DO<sup>1</sup>, Yu-Fen YIN<sup>1</sup>, Xin-Yu LIN<sup>1</sup>, Yaw-Shyan FU<sup>2</sup>, Tzung-Fang GUO<sup>1,3,4,5</sup>  
(1. Department of Photonics, National Cheng Kung University, 2. Department of Greenery Technology, National University of Tainan, 3. Program on Key Materials, Academy of Innovative Semiconductor and Sustainable Manufacturing, National Cheng Kung University, 4. Research Center for Applied Sciences (RCAS), Academia Sinica, 5. Taiwan Research Center for Critical Issues (RCCI), Academia Sinica)
- p17 Angular Color Stability and Light Extraction Efficiency in OLEDs by A Facile Preparation of PMMA/SiO<sub>2</sub> Composites  
\*Chang-Rui Chen<sup>1</sup>, Yi-Ting Lee<sup>1</sup>, Ya-Lei Hu<sup>1</sup>, Min-Xiang Liao<sup>2</sup>, Mao-Ying Chen<sup>2</sup>, Bo-Yen Lin<sup>2</sup> (1. Department of Chemistry, Soochow University, 2. Department of Opto-Electronic Engineering, National Dong Hwa University)
- p18 Exciton dynamics of TADF materials showing peculiar thermal behavior of PL decay  
\*Keito Mizukoshi, Youichi Tsuchiya, Debasish Barman, Chihaya Adachi (Center for Organic Photonics and Electronics Research (OPERA) and Department of Applied Chemistry, Kyushu University)
- p19 Development of Multiple Resonance Emitters with Low Triplet Energy  
\*JIN-YU PAI, I-Hsiang Wang, Yi-Ting Lee (Department of Chemistry, Soochow University)
- p20 Pyrene-based Material of Blue Organic Light emitting Diode  
\*YEN-CHIEH LIU<sup>1</sup>, YU-TING LIN<sup>2</sup>, JIUN-HAW LEE<sup>2</sup>, YI-TING LEE<sup>1</sup> (1. Department of Chemistry, Soochow University, 2. Taiwan University)
- p21 Blue Triplet-Triplet Fusion OLEDs Based on Pyrene or Anthracene Derivative Hosts  
\*Chiao-En Li, Ya-Lei Hu, Yi-Ting Lee (Soochow University)
- p22 Charge-Induced Spectroscopy for Degraded small molecules of Organic Light Emitting diodes  
\*Tae-Ho Yang, Hye-Ri Joe, Jin-Sun Heo, Jonghee Lee, Jae-Hyun Lee (Hanbat National University)
- p23 Impacts of Methoxy Substituents on Luminescence Properties of NIR Phosphorescent Iridium(III) Complexes with 2-Phenylquinoxaline-Based Cyclometalated Ligands  
\*Keima Yoneda<sup>1</sup>, Ryuta Shikura<sup>1</sup>, Naoya Suzuki<sup>1</sup>, Shintaro Kodama<sup>1</sup>, Takeshi Maeda<sup>1</sup>, Shigeyuki Yagi<sup>1</sup>, Hideki Fujiwara<sup>2</sup>, Seiji Akiyama<sup>3</sup> (1. Graduate School of Engineering, Osaka Metropolitan University, 2. Graduate School of Science, Osaka Metropolitan University, 3. Mitsubishi Chemical Corporation)
- p24 Thermally Activated Delayed Fluorescence Properties of Donor-Acceptor-Type Dyes Bearing a Quinoxaline-Based Electron Acceptor Unit  
\*Masaki Nagaoka<sup>1</sup>, Keito Ueda<sup>2</sup>, Naoya Suzuki<sup>1,2</sup>, Shintaro Kodama<sup>1,2</sup>, Takeshi Maeda<sup>1,2</sup>, Shigeyuki Yag<sup>i1,2</sup> (1. Osaka Metropolitan University, 2. Osaka Prefecture University)
- p25 Observation of Carrier Behaviors of Blue Organic Light-Emitting Diodes Using Displacement Current Measurement  
\*Ryo Koike, Takaaki Suzuki, Yuya Tanaka (Gunma University)

- p26 Multiscale charge transport simulation in an organic amorphous system: molecular scale understanding of the distribution of mobility and charge traps  
\*Hiroki Sato, Syun Kanda, Hironori Kaji (Institute for Chemical Research, Kyoto University)
- p27 Reproduction of molecular orientation and charge mobility in organic amorphous thin films using molecular dynamics and kinetic Monte Carlo simulation  
\*Kuraudo Ishihara, Hironori Kaji (Institute for Chemical Research, Kyoto University)
- p28 Highly luminescent pentaazaphenylene based delayed fluorescence emitters by allowing forbidden transition  
\*Yuka Yasuda, Katsuyuki Shizu, Hiroyuki Tanaka, Hironori Kaji (Institute for Chemical Research, Kyoto University)
- p29 Low-Voltage Upconversion Organic Light-Emitting Diodes with Solution-Processed Donor/Acceptor Layers via One-Step Spin-Coating  
\*Moeto Okuda<sup>1</sup>, Takashi Kobayashi<sup>1,2</sup>, Hiroyoshi Naito<sup>1,2,3</sup>, Takashi Nagase<sup>1,2</sup> (1. Osaka Metropolitan Univ., 2. RIMED, Osaka Metropolitan Univ., 3. RISA, Ritsumeikan Univ.)
- p30 Rational molecular design strategy aimed at the compatibility of two-photon absorption phenomenon and TADF-based OLED application with planar triazine derivatives  
\*Youhei Chitose<sup>1,2</sup>, Youichi Tsuchiya<sup>1</sup>, Chihaya Adachi<sup>1,3</sup> (1. OPERA, Kyushu university, 2. CMS, Kyushu university, 3. I<sup>2</sup>CNER, Kyushu university)
- p31 Impact of molecular anisotropy design on spontaneous orientation polarization  
\*Rena Sugimoto, Masaki Tanaka, Nobuhumi Nakamura (Tokyo University of Agriculture and Technology)
- p32 Molecular-Level Insight into Impact of Additives on Film Formation and Molecular Packing in Y6-based Organic Solar Cells  
\*Le MEI<sup>1</sup>, Xinxin XIA<sup>2</sup>, Rui SUN<sup>3</sup>, Yuyu PAN<sup>4</sup>, Jie MIN<sup>3</sup>, Xinhui LU<sup>2</sup>, Alex K.-Y. JEN<sup>1</sup>, Xian-Kai CHEN<sup>1,5</sup> (1. Department of Chemistry, City University of Hong Kong, 2. Department of Physics, The Chinese University of Hong Kong, 3. The Institute for Advanced Studies, Wuhan University, 4. School of Petrochemical Engineering, Shenyang University of Technology, 5. Institute of Functional Nano & Soft Materials (FUNSOM), Soochow University)
- p33 Organic solar cell modules with good sunlight stability  
\*Hsin-Fei Meng (National Yang Ming Chiao Tung University)
- p34 Interface Properties of Organic Solar Cells with Spontaneous Orientation Polarization Interlayer Studied by DCM Technique  
\*RENJIE CHEN (Graduate School of Science and Technology, Meiji University)
- p35 Regulating the strain in perovskite films to obtain stable perovskite solar cells  
\*Hao Wang<sup>1</sup>, Guizhou Yuan<sup>2</sup>, Qinqin Wang<sup>3</sup>, Zhongmin Zhou<sup>3</sup>, Qi Chen<sup>2</sup> (1. Beijing Huairou Lab, 2. Beijing Inst Technol, 3. Qingdao Univ Sci & Technol)
- p36 Organic photovoltaic cells using molybdenum oxide covered with self-assembled monolayer as a hole-transporting buffer layer  
\*Hirona Ninoto, Akira Sato, Takayuki Chiba, Takeshi Sano (Yamagata Univ.)
- p37 Photo-induced absorption spectroscopy for perovskite films and solar cells  
\*Takao Muraya<sup>1</sup>, Katsuichi Kanemoto<sup>1,2</sup> (1. Osaka Metropolitan University, 2. NITEP)
- p38 Temperature-Dependent Characterization of Light-Induced Ion Migration in Lead Halide Perovskites and Its Impact on Solar Cell Performance



- Po-Kai Kung<sup>1</sup>, \*Sih-Ru Chin<sup>1</sup>, Peter Chen<sup>1,2,3</sup> (1. DOP, NCKU, 2. Hi-GEM, NCKU, 3. AISSM, NCKU)
- p39 Lead-free inorganic halide perovskite thick films for X-ray detection under ambient spray coating with environmental-friendly solvent  
Zi-Xiang Wen<sup>1</sup>, \*Yu-Shan Feng<sup>1</sup>, Chen-Fu Lin<sup>1</sup>, (Peter) Chao-Yu Chen<sup>1,2,3</sup> (1. DOP, NCKU, 2. Hi-GEM, NCKU, 3. AISSM, NCKU)
- p40 A Polymer Donor for Organic Photovoltaics: Synthesis without Low-Temperature Reaction and Column Purification  
\*Kodai Yamanaka, Tsubasa Mikie, Itaru Osaka (Hiroshima Univ.)
- p41 Effective Surface Passivation for Highly Efficient and Stable Perovskite Solar Cells with Additive Phase Transition  
\*Dohyun Kim, Taiho Park (POSTECH)
- p42 Post-treatment Formamidineium-based Perovskite Film via Ammonia gas  
\*Duc-Anh Le<sup>1</sup>, Tzu-Chien Wei<sup>1,2</sup> (1. Department of Chemical Engineering, National Tsing Hua University, 2. Research Center for Critical Issues, Academia Sinica)
- p43 Advancing Solar Efficiency: The Promise of Four-Terminal Tandem Perovskite-Silicon Solar Cells  
\*Tho Ngoc Anh Vo (National Tsing Hua University)
- p44 Low-Temperature Processable Electrodeposited TiO as the Electron Transport Layer in an Efficient Plastic Perovskite Solar Cell  
\*Phuong Ha Thi Ngo, Tzu-chien Wei (National Tsing Hua University)
- p45 Thickness Control in CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Thin Film Fabrication by Bar-Coating Method for Solar Cell Application  
\*Masaki Horie, Masatoshi Koyama, Toshihiko Maemoto, Akihiko Fujii (Osaka Institute of Technology)
- p46 Modulation Spectroscopies in Perovskite Solar Cells for the Characterization of Electronic and Ionic Transport  
Takashi Hirokawa<sup>1</sup>, Takashi Kobayashi<sup>1</sup>, Takashi Nagase<sup>1</sup>, \*Hiroyoshi Naito<sup>1,2</sup> (1. Osaka Metropolitan University, 2. RISA, Ritsumeikan University)
- p47 Synaptic and light response characteristics of oxygen-plasma-treated organic thin-film transistors  
\*Kai Lun Su, Pin-Zhen Chen, Fu-Chiao Wu, Wei-Yang Chou, Horng-Long Cheng (National Cheng Kung University)
- p48 2D metal-organic frameworks for high-performance ultraflexible organic electrochemical transistors  
\*JIAJUN SONG, FENG YAN (Department of Applied Physics, The Hong Kong Polytechnic University)
- p49 Direct Solution Deposition of Large-Area Non-Solvated Fullerene Single-Crystal Films for High-Performance n-Type Field-Effect Transistors  
\*Yujie Zhao, Boyu Peng, Hanying Li (MOE Key Laboratory of Macromolecular Synthesis and Functionalization, International Research Center for X Polymers, Department of Polymer Science and Engineering, Zhejiang University)
- p50 Enhancing the uniformity of organic field-effect transistors by a single-crystalline layer-controlled active channel  
\*Qiuyue Sheng, Boyu Peng, Hanying Li (Zhejiang University)
- p51 A Dry-Transfer Method for Molecular Monolayer Crystals toward Flexible High-Performance Organic Field-Effect Transistors  
\*Xinru Wang, Boyu Peng, Hanying Li (Zhejiang University)
- p52 Fabrication of Ph-BTBT-10 polycrystalline thin films by high-speed blade-coating using liquid crystallinity and their transistor characteristics

- p53 \*Issei Suzuki, Jun-ichi Hanna, Hiroaki Iino (Institute of Science Tokyo)  
Organic antiambipolar transistor with floating-gate for unique neuromorphic operations  
\*Yuho Yamamoto<sup>1,2</sup>, Ryoma Hayakawa<sup>1</sup>, Yoichi Yamada<sup>2</sup>, Yutaka Wakayama<sup>1</sup> (1. National Institute for Materials Science (NIMS), University of Tsukuba)
- p54 Synthesis and Semiconductor Properties of Near-Infrared Absorbing Ring-Fused Quinonoidal Oligothiophene Based on a Dibenzosexithiophene Core  
\*Yue Zhang<sup>1</sup>, Naoki Ando<sup>1,2</sup>, Yutaka Ie<sup>1,2</sup> (1. The Institute of Scientific and Industrial Research, Osaka University, 2. ICS-OTRI)
- p55 High Performance Phototransistor Memory Enabled by the Mismatch of Spontaneous Orientation Polarization at the Channel/Electret Interface  
\*Yi-Hsun Weng<sup>1</sup>, Yan-Cheng Lin<sup>2</sup>, Wen-Chang Chen<sup>1</sup> (1. National Taiwan University, 2. National Cheng Kung University)
- p56 Performance Enhancement in Top-Gate Organic Transistor Memories Using Solution-Processed, Self-Organized Organic Floating-Gate Layers  
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- p57 Emission Dipole Orientation for Polarization Tuning in Organic Lasers  
\*Tuul Tsagaantsooj, Xun Tang, Chihaya Adachi (Center for Organic Photonics and Electronics Research (OPERA), Kyushu University)
- p58 Fast, accurate, and portable antibody detection based on organic electrochemical transistors  
\*Hong Liu, Jiajun Song, Zeyu Zhao, Feng Yan (The Hong Kong Polytechnic University)
- p59 Viable bacterial activity measurement based on redox reactions of tetrazolium salts  
\*HIKARU IKEDA<sup>1</sup>, Hayato Fujimura<sup>1</sup>, Akira Tokonami<sup>1</sup>, Miya Kawanaka<sup>1</sup>, Masashi Fujita<sup>2</sup>, Yasuhiro Sadanaga<sup>1</sup>, Hiroshi Shiigi<sup>1</sup> (1. Osaka Metropolitan University, 2. EC FRONTIER CO., LTD)
- p60 Enhanced Seebeck Coefficient in Gelatin Methacryloyl-Based Thermogalvanic Cells Through Ion-Induced Crystallization and Nanostructural Control  
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- p61 Impact of High Boiling Point Solvents on the Thermoelectric Properties of SDS modified PEDOT: PSS Freestanding Films  
\*MD. ABDUR RAHMAN, Shafayat Hossain, Naoki Kishi (Nagoya Institute of Technology)
- p62 Tuning Thermoelectric Performance with N-annulated Perylene -Based Small Molecules and Single-Walled Carbon Nanotube Nanocomposite Films  
\*CHE-AN CHOU<sup>1</sup>, Shao-Cheng Fang<sup>2</sup>, Po-Shen Lin<sup>1</sup>, Wei-Ni Wu<sup>1</sup>, Shao-Huan Hong<sup>1</sup>, Jih-Min Lin<sup>5</sup>, Ken-Tsung Wong<sup>2,3</sup>, Cheng-Liang Liu<sup>1,4</sup> (1. Department of Materials Science and Engineering, National Taiwan University, 2. Department of Chemistry, National Taiwan University, 3. Institute of Atomic and Molecular Sciences, Academia Sinica, 4. Advanced Research Center for Green Materials Science and Technology, National Taiwan University, 5. National Synchrotron Radiation Research Center)

- p63 Carbon-Sequestering Thermoelectric Devices from Waste-Derived Biomimetic Spider Silk  
\*Chih-Wei Hsu, Ming-Yan Shen, Hsuan-Chen Wu, Wen-Chang Chen, Cheng-Liang Liu (National Taiwan University)
- p64 Microstructure Characterization of Perovskite Microwires and Application in Planar Type Broadband Photodetectors  
\*Fu-Chiao Wu, Kuan-Te Wu, Wei-Yang Chou, Wei-Chih Lai, Horng-Long Cheng (National Cheng Kung University)
- p65 Dual Broadband/Narrowband Organic Photodetectors with Photomultiplication  
\*Gajendra Madanlal Suthar<sup>1</sup>, Chih-Wei Chu<sup>3</sup>, Yi-Ming Chang<sup>2</sup>, Fang-Chung Chen<sup>1,4</sup> (1. Department of Photonics, College of Electrical and Computer Engineering, National Yang Ming Chiao Tung University, 2. Raynergy Tek Incorporation, 3. Research Center for Applied Sciences, Academia Sinica, 4. Center for Emergent Functional Matter Science, National Yang Ming Chiao Tung University)
- p66 Development of A Rapid and Specific Electrochemical Detection Method for Doxorubicin  
\*Shuyi Sun<sup>1</sup>, Ryo Nishii<sup>1</sup>, Akihiro Nakao<sup>1</sup>, Yojiro Yamamoto<sup>1</sup>, Genki Ogata<sup>2</sup>, Yasuaki Einaga<sup>2</sup>, Hiroshi Hibino<sup>3</sup>, Hiroshi Shiigi<sup>1</sup> (1. Department of Applied Chemistry, Osaka Metropolitan University, 2. Department of Chemistry, Keio University, 3. Department of Pharmacology, Osaka University)
- p67 Relationship between local structure and magnetic properties in N-doped graphitic carbon materials  
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- p68 Flexible integrated air pressure sensors for monitoring positive and negative pressure distribution  
\*YAN XUAN<sup>1</sup>, Takahiro Uchiyama<sup>2</sup>, Hiroki Ura<sup>2</sup>, Shuji Hagiwara<sup>2</sup>, Hiroyuki Kato<sup>2</sup>, Sudipta Kumar Sarkar<sup>1</sup>, Kuniharu Takei<sup>1</sup> (1. Hokkaido University, 2. Japan Aerospace Exploration Agency)
- p69 Material Composition and Performance Study of Flexible Strain Sensor with Kirigami Structures  
\*Masaki Teramoto, Kuniharu Takei (Graduate School of Information Science and Technology, Hokkaido University)
- p70 Very Large Aromatic Organic Halides for Environmentally Benign Halide Perovskites  
\*Pei-En Jan<sup>1</sup>, Hao-Chi Liang<sup>2</sup>, Ho-Hsiu Chou<sup>2</sup>, Hao-Wu Lin<sup>1</sup> (1. Department of Materials Science and Engineering, National Tsing Hua University, 2. Department of Chemical Engineering, National Tsing Hua University)
- p71 Single Source Evaporation for High resolution Lead-free Perovskite X-ray Scintillator  
\*Hao-Cheng Lin, Hao-Wu Lin (Department of Materials Science and Engineering, National Tsing Hua University)
- p72 Circularly Polarized Luminescence Measurements: From Macroscale to Nanoscale  
\*Hung-Ming Chen, Yung-Tang Chuang, Hao-Wu Lin (National Tsing Hua University)
- p73 Sulfate-Capped CsPbI<sub>3</sub> Nanoplatelets for Display Applications

- \*Ping-Hsun Tsai, Tzu-Hao Liao, Hao-Cheng Lin, Hao-Wu Lin (Department of Materials Science and Engineering, National Tsing Hua University)
- p74 All Vacuum-deposited Perovskite Light-emitting Diode with Effective Passivation by Small Molecule
- \*Yu-Jer Wu, Hao-Wu Lin (Department of Materials Science and Engineering, National Tsing Hua University)
- p75 Organic Rectifying Diodes Fabricated with Deposition of MoO<sub>3</sub> Only Under Anode Electrode
- \*Norio Onojima, Ryousei Matsumoto, Kanta Hatano, Naoki Koremura (University of Yamanashi)
- p76 Preparation and properties of germanium halide perovskite single crystals
- \*Yoshiki Hatsum<sup>i1</sup>, Hironori Ogata<sup>1,2</sup> (1. Major in Applied Chemistry, Graduate School of Science and Engineering, Hosei University, 2. Research Center for Micro-Nano Technology, Hosei University)
- p77 CsPbI<sub>3</sub> Perovskite Nanocrystals Thick Films for LEDs and Photodetector Applications
- \*Haruka Abe<sup>1</sup>, Daisuke Yokota<sup>2</sup>, kento Yanagihashi<sup>1</sup>, Takao Oto<sup>2</sup>, Takayuki Chiba<sup>1</sup> (1. Grad. Sch. of Org. Mater. Sci. Yamagata Univ., 2. Grad. Sch. of Sci. and Eng. Yamagata Univ.)
- p78 Orientation control and anisotropic electronic properties of lead halide perovskite single crystalline thin films
- \*Hironori Ogata, Tomohiro Watanuki (Hosei University)
- p79 Fabrication and characterization of perovskite solar cells using conductive carbon materials as hole transport and electrode materials
- \*Akira Hatsuta<sup>1</sup>, Hironori Ogata<sup>1,2</sup> (1. Department of Applied Chemistry, Graduate School of Science and Engineering, Hosei University, 2. Research Center for Micro-Nano Technology, Hosei University)
- p80 Phase-Separated Kelvin Probe Method to Evaluate the Energy Diagram inside Liquids
- \*Haruto Jibiki<sup>1</sup>, Masahiro Ohara<sup>2</sup>, Hirohiko Fukagawa<sup>1,3</sup>, Hisao Ishii<sup>1,3,4</sup> (1. Graduate School of Science and Engineering, Chiba University, 2. Faculty of Engineering, Shinshu University, 3. Center for Frontier Science, Chiba University, 4. Molecular Chirality Research Center, Chiba University)
- p81 Quantum Chemical Calculation of Electronic Transport Properties of Amorphous Organic Semiconductors
- Hayate Fujimura<sup>1</sup>, Toshio Asada<sup>1</sup>, \*Hiroyoshi Naito<sup>1,2</sup> (1. Osaka Metropolitan University, 2. RISA, Ritsumeikan University)