



## International Conference Asia-Pacific Hybrid and Organic Photovoltaics 2018 (AP-HOPV18)

Kitakyūshū-shi, Japan, 2018 January 28th - 30th

Conference Chairs: Hiroshi Segawa, Shuzi Hayase and Juan Bisquert

### Conference Program

January 28th - Day 1 (Sunday)	
16:00 - 17:00	Registration
17:00 - 18:00	Welcome Drink
January 29th - Day 2 (Monday)	
08:00 - 08:40	Registration
08:40 - 08:45	Announcement of the Day
08:45 - 09:00	Opening
	<b>Session G1</b> Chair: Hiroshi Segawa
09:00 - 09:45 G1-K1	<u>Michael Graetzel</u> ( <i>Laboratory of Photonics and Interfaces Ecole Polytechnique Fédérale de Lausanne, Suisse</i> ) Molecular Photovoltaics and Perovskite Solar Cells
09:45 - 10:15 G1-I1	<u>David Ginger</u> ( <i>Department of Chemistry, University of Washington</i> ) Approaching the Shockley-Queisser Limit with Interface Control in Halide Perovskites
10:15 - 10:45 G1-I2	<u>Eric Wei-Guang Diao</u> ( <i>Department of Applied Chemistry and Institute of Molecular Science, National Chiao Tung University, Hsinchu 300, Taiwan</i> ) Tin-Rich and Lead-Free Perovskite Solar Cells
10:45 - 11:15	<b>Coffee Break</b>
11:15 - 11:45 G1-I3	<u>Songyuan Dai</u> ( <i>Beijing Key Laboratory of Novel Thin Film Solar Cells, Renewable Energy School, North China Electric Power University, Beijing, 102206, P. R. China</i> ), Xu Pan, Linhua Hu, Jianxi Yao Preparation and Optimization of Materials for Efficient Perovskite Solar Cells
11:45 - 12:15 G1-I4	<u>Takaya Kubo</u> ( <i>Research Center for Advanced Science and Technology, The University of Tokyo</i> ), Haibin Wang, Jotaro Nakazaki, Hiroshi Segawa Solution-Processed Colloidal-Quantum-Dot Solar Cells Operating in the Infrared Region
12:15 - 12:45 G1-I5	<u>Yongfang Li</u> ( <i>Soochow University</i> ) Side-Chain Engineering of Photovoltaic Materials for High Performance Polymer Solar Cells
12:45 - 13:00	<b>Industries: Greatcellsolar &amp; TCI</b>
13:00 - 14:30	<b>Lunch</b>
	<b>Session A1</b> Chair: Eric Wei-Guang Diao
14:30 - 15:00 A1-IS1	<u>Hongwei Han</u> ( <i>Wuhan National Laboratory for Optoelectronics, Huazhong University of Science and Technology</i> ) Printable Mesoscopic Perovskite Solar Cell: From Cell to Module
15:00 - 15:15 A1-O1	<u>Gaurav Kapil</u> ( <i>The University of Tokyo</i> ), Kengo Hamada, Yuhei Ogomi, Takeru Bessho, Takumi Kinoshita, Qing Shen, Taro Toyoda, Takuro N Murakami, Hiroshi Segawa, Shuzi Hayase Study to realize the effect of multiple monovalent cation for lead/tin mixed perovskite solar cells
15:15 - 15:30 A1-O2	<u>Sagar Jain</u> ( <i>SPECIFIC IKC, College of Engineering, University of Swansea, Swansea, U.K</i> ) Vapour Assisted Morphological Tailoring of Lead-Free Bismuth Based Perovskite Solar Cells for Improved Performance and Stability



15:30 - 15:45	<u>Arpita Varadwaj</u> ( <i>The University of Tokyo</i> ), Pradeep R. Varadwaj, Koichi Yamashita
A1-O3	Haloammonium Halide Perovskites: A Class of Newly Identified Compounds for Photovoltaics
15:45 - 16:15	<b>Coffee Break</b>
16:15 - 16:30	<u>Bich Phuong Nguyen</u> ( <i>Department of Physics, Ewha Womans University</i> ), Trang Thi Thu Nguyen, Juran Kim,
A1-O4	Hye Ri Jung, Seokhyun Yoon, Wiilam Jo Influence of iodine-to-bromine ratio on electrical properties of lead-free Sn halide perovskite solar cells
16:30 - 16:45	<u>Luis Ono</u> ( <i>Energy Materials and Surface Sciences Unit (EMSS), Okinawa Institute of Science and Technology</i>
A1-O5	<i>Graduate University (OIST)</i> ), Matthew Leyden, Sonia Raga, Yan Jiang, Longbin Qiu, Mikas Remeika, Emilio Juarez-Perez, Shenghao Wang, Yabing Qi Up-Scaling of Organic-Inorganic Hybrid Perovskite Solar Cells and Modules
16:45 - 17:00	<u>Namrata Pant</u> ( <i>University of Yamanashi</i> ), Masatoshi Yanagida, Yasuhiro Shirai, Kenjiro Miyano
A1-O6	Substrate dependent morphological and electronic properties of lead halide perovskite solar cells
17:00 - 17:15	<u>Zhiping Wang</u> ( <i>Clarendon Laboratory, Department of Physics, University of Oxford, Parks Road, Oxford, OX1</i>
A1-O7	<i>3PU, United Kingdom</i> ), Qianqian Lin, Francis Chmiel, Nobuya Sakai, Laura Herz, Henry Snaith Self-assembled 2D-3D heterostructured butylammonium-caesium-formamidinium lead halide perovskites for stable and efficient solar cells
17:15 - 17:30	<u>Zonglong Zhu</u> ( <i>Department of Chemistry, Hong Kong University of Science and Technology, Hong Kong</i> )
A1-O8	Highly Efficient Lead-free or Pb/Sn based Perovskite Solar Cell through Compositional Engineering
<b>Session B1</b> Chair: Hideo Ohkita	
14:30 - 15:00	<u>Yabing Qi</u> ( <i>Energy Materials and Surface Sciences Unit (EMSS), Okinawa Institute of Science and Technology</i>
B1-IS1	<i>Graduate University (OIST)</i> ) Perovskite Material and Solar Cell Research by Surface Science and Advanced Characterization
15:00 - 15:15	<u>Teresa S. Ripolles</u> ( <i>Kyushu Institute of Technology Graduate School of Science</i> ), Chi Huey Ng, Kengo Hamada,
B1-O1	Siow Hwa Teo, Hong Ngee Lim, Juan Bisquert, Shuzi Hayase Origin of Open Circuit Voltage in wide band gap absorbers of all inorganic Cesium Perovskite Solar Cells
15:15 - 15:30	<u>Evelyne Knapp</u> ( <i>Institute of Computational Physics, ZHAW</i> ), Beat Ruhstaller, Martin Neukom
B1-O2	Physical model for impedance loop and negative capacitance in perovskite solar cells
15:30 - 15:45	<u>Agustín Bou</u> ( <i>Institute of Advanced Materials, Universitat Jaume I, Spain</i> ), Juan Bisquert
B1-O3	Dynamic Hysteresis in Perovskite Solar Cells
15:45 - 16:15	<b>Coffee Break</b>
16:15 - 16:30	<u>Chuanjiang Qin</u> ( <i>OPERA, Kyushu University</i> ), Toshinori Matsushima, Chihaya Adachi
B1-O4	Degradation mechanism of perovskite solar cells under standard test conditions
16:30 - 16:45	<u>Xiongfeng Lin</u> ( <i>Monash University</i> )
B1-O5	Dipole-field-assisted charge extraction in metal-perovskite-metal back-contact solar cells
16:45 - 17:00	<u>James Ryan</u> ( <i>International Centre for Young Scientists, National Institute for Materials Science</i> )
B1-O6	Understanding the Voc in Perovskite Solar Cells Using Photo-Induced Transient Optoelectronic Techniques
17:00 - 17:15	<u>Jay Patel</u> ( <i>Clarendon Laboratory, Department of Physics, University of Oxford, Parks Road, Oxford, OX1 3PU,</i>
B1-O7	<i>United Kingdom</i> ), Jennifer Wong-Leung, Stephan Van Reenen, Nobuya Sakai, Jacob Wang, Elizabeth Parrott, Mingzhen Liu, Henry Snaith, Laura Herz, Michael Johnston The Importance of Interface Morphology for Hysteresis-Free Perovskite Solar Cells
17:15 - 17:30	<u>Hye Ri Jung</u> ( <i>Department of Physics, Ewha Womans University</i> ), Bich Phuong Nguyen, William Jo
B1-O8	Carrier transport and potential distribution near grain boundaries of perovskite lead halide and tin halide thin films
<b>Session C1</b> Chair: Yabing Qi	
14:30 - 15:00	<u>Liyuan Han</u> ( <i>National Institute for Materials Science, Tsukuba, 305-0047, Japan</i> )
C1-IS1	New Approaches for Large Area Perovskite Solar Module
15:00 - 15:15	David Jones, <u>Valerie Mitchell</u> ( <i>School of Chemistry, University of Melbourne</i> )
C1-O1	Amphiphilic block-copolymers for morphology control in OSCs



15:15 - 15:30	<u>Xintong Zhang</u> ( <i>Northeast Normal University</i> ), Yinglin Wang, Shuaipu Zang, Jinhuan Li, Yichun Liu
C1-O2	Interfacial Modification of Three-dimensional Heterojunctional Colloidal Quantum Dot Solar Cell
15:30 - 15:45	<u>Xia Hao</u> ( <i>Institute of New Energy and Low-carbon Technology, Sichuan University</i> ), Shenghao Wang, Takeaki Sakurai, Katsuhiro Akimoto
C1-O3	The effect of cathode buffer in small molecule organic solar cells
15:45 - 16:15	<b>Coffee Break</b>
16:15 - 16:30	<u>Thu Trang Do</u> ( <i>School of Chemistry, Physics and Mechanical Engineering, Queensland University of Technology (QUT), 2 George Street, Brisbane, QLD-4001, Australia</i> ), Hong Duc Pham, Yasunori Takeda, Sergei Manzhos, John Bell, Shinzo Tokito, Prashant Sonar
C1-O4	Conjugated 1,8-Naphthalimide Based Solution Processable n-Type Semiconductors for Organic Electronics
16:30 - 16:45	<u>Endre Horvath</u> ( <i>EPFL SB IPHYS LPMC, station 3, 1015, Lausanne</i> ), Massimo SPINA, Bálint NÁFRÁDI, Eric BONVIN, Márton KOLLÁR, Andrzej SIENKIEWICZ, Anastasiia GLUSHKOVA, Alla ARAKCHEEVA, Zsolt SZEKRÉNYES, Hajnalka TÓHÁTI, Katalin KAMARÁS, Richard GAAL, László FORRÓ
C1-O5	Organic-inorganic lead halide perovskite nanowires: formation mechanism and optoelectronic applications
16:45 - 17:00	<u>Xinxing Liang</u> ( <i>Department of Chemistry, University of Bath</i> ), Wentao Deng, Kejun Wu, Laura Torrente-Murciano, Petra Cameron
C1-O6	Continuous Low Temperature Synthesis of MAPbX <sub>3</sub> Perovskite Quantum Dots with Tuneable Luminescence
17:00 - 17:15	<u>Aymen Yangu</u> ( <i>Institute of Industrial Science, University of Tokyo, 4-6-1 Komaba, Meguro-ku, Tokyo 153-8505, Japan</i> ), Kamel Boukheddaden, Smail Triki, Sebastien Pillet, Younes Abid
C1-O7	White-Light Emission in two-dimensional Hybrid Perovskites
17:15 - 17:30	<u>Wenxin Mao</u> ( <i>Department of Materials Science and Engineering, Monash University</i> )
C1-O8	Controlled Growth of Monocrystalline Organo-Lead Halide Perovskite and Its Application in Photonic Devices
17:30 - 19:00	<b>Posters Exhibition</b>
20:00 - 22:00	<b>Social Dinner</b>

### January 30th - Day 3 (Tuesday)

08:55 - 09:00	<b>Announcement of the Day</b>
	<b>Session G2</b> Chair: Shuzi Hayase
09:00 - 09:45	<u>Henry Snaith</u> ( <i>Clarendon Laboratory, Department of Physics, University of Oxford, Parks Road, Oxford, OX1 3PU, United Kingdom</i> )
G2-K1	Improving efficiency and stability in single and multi-junction perovskite solar cells
09:45 - 10:15	<u>subodh Mhaisalkar</u> ( <i>Materials Science and Engineering, Nanyang Technological University, SG</i> )
G2-I1	Metal-Halide Perovskite Nanocrystals: Unlocking Size Dependent Effects for High Performance Solar Cells and Light-Emitting Devices
10:15 - 10:45	<u>Alex K-Y Jen</u> ( <i>Department of Materials Science &amp; Engineering, University of Washington, Seattle, WA 98195</i> )
G2-I2	Rational Material, Interface, and Device Engineering for High-Performance and Stable Perovskite Solar Cells
10:45 - 11:15	<b>Coffee Break</b>
11:15 - 11:45	<u>Hyun Suk Jung</u> ( <i>School of Advanced Materials Science &amp; Engineering, Sungkyunkwan University</i> )
G2-I3	Interfacial Nanomaterials Engineering in Perovskite Solar Cells
11:45 - 12:15	<u>Yang Yang</u> ( <i>Department of Materials Science and Engineering and California NanoSystems Institute, University of California, Los Angeles, California 90095, United States</i> ), Jin-Wook Lee, Lijian Zuo, Qifeng Han, Yao-Tsung Hsieh, Sang-Hoon Bae, Nicholas De Marco, Pengyu Sun
G2-I4	Controlled Crystal Growth and Defect Passivation for Efficient Planar Perovskite Solar Cells
12:15 - 12:45	<u>Hideo Ohkita</u> ( <i>Kyoto university</i> ), Hyung Do Kim
G2-I5	Device Analysis of Lead-Halide Perovskite Solar Cells
	<b>Invited Speaker Session</b> Chair: Shuzi Hayase



12:45 - 13:15	<b>Paul Meredith</b> ( <i>Sêr Cymru Chair in Sustainable Advanced Materials Department of Physics, Swansea University, Singleton Park Swansea SA2 8PP</i> )
Session-IS1	Commentary on the Scaling Physics of Printable Organic and Perovskite Thin Film Solar Cells
13:15 - 14:30	<b>Lunch</b>
	<b>Session A2</b> Chair: Hyun Suk Jung
14:30 - 15:00	<b>Takayuki Negami</b> ( <i>Panasonic Corporation</i> )
A2-IS1	Improvement on Thermal Stability of Perovskite Solar Cells and Fabrication of Modules for Practical Use
15:00 - 15:15	<b>Dhruba Khadka</b> ( <i>International Centre for Young Scientists, National Institute for Materials Science</i> ), Yasuhiro Shirai, Masatoshi Yanagida, Kenjiro Miyano
A2-O1	Efficient Wide Bandgap Mixed Halide Perovskite Solar Cells Tuning with Electron Transport Layers
15:15 - 15:30	Masashi Ozaki, <b>Jiewei Liu</b> ( <i>Institute for Chemical Research, Kyoto University, Uji, Kyoto 611-0011, Japan</i> ), Yukie Katsuki, Taketo Handa, Ryosuke Nishikubo, Yoshihiko Kanemitsu, Akinori Saeki, Yasujiro Murata, Atsushi Wakamiya
A2-O2	High Purity Solvent-Coordinated Tin Halide Complexes for Lead Free Perovskite Solar Cells
15:30 - 15:45	<b>Qicheng Hou</b> ( <i>Department of Chemical Engineering, Monash University</i> ), Dorota Bacal, Askhat Jumabekov, Wei Li, Ziyu Wang, Xiongfeng Lin, Soon Hock Ng, Boer Tan, Qiaoliang Bao, Anthony Chesman, Yi-Bing Cheng, Udo Bach
A2-O3	Revealing the Relationship between Design and Performance of Back-Contact Perovskite Solar Cells with Honeycomb Charge Collecting Electrode
15:45 - 16:15	<b>Coffee Break</b>
16:15 - 16:30	<b>David McMeekin</b> ( <i>Clarendon Laboratory, Department of Physics, University of Oxford, Parks Road, Oxford, OX1 3PU, United Kingdom</i> ), Zhiping Wang, Waqaas Rehman, Federico Pulvirenti, Jay Patel, Nakita Noel, Seth Marder, Laura Herz, Henry Snaith
A2-O4	Crystallization kinetics and morphology control of formamidinium-cesium mixed-cation lead mixed-halide perovskite via tunability of the colloidal precursor solution
16:30 - 16:45	<b>Oliver Filonik</b> ( <i>Technische Universität München, Munich School of Engineering, Lichtenbergstr. 4a, 85748 Garching, Germany</i> ), Margret Thordardottir, Jenny Lebert, Stephan Proeller, Sebastian Weiss, Jia Haur Lew, Anish Priyadarshi, Nripan Mathews, Peter Müller-Buschbaum, Eva M. Herzig
A2-O5	Investigating the perovskite crystallization in fully printable mesoscopic perovskite solar cells
16:45 - 17:00	<b>Moritz Futscher</b> ( <i>AMOLF</i> ), Bruno Ehrler
A2-O6	Performance Limitations and Prospects of Perovskite/Silicon Tandem Solar Cells
17:00 - 17:15	Tianhao Yan, <b>Ruiyao Wang</b> ( <i>Department of Chemistry, Xi'an Jiaotong-Liverpool University</i> )
A2-O7	Study of Organolead Halide Perovskite Film Formation Mechanism from the View of Coordination Chemistry
	<b>Session B2</b> Chair: Takaya Kubo
14:30 - 14:45	<b>Jeremy Barbe</b> ( <i>SPECIFIC IKC, College of Engineering, University of Swansea, Swansea, U.K</i> ), Vikas Kumar, Michael Newman, Harrison Lee, Sagar Jain, Hu Chen, Cecile Charbonneau, Cornelia Rodenburg, Chung Tsoi
B2-O1	Origin of dark electrical bias-induced degradation of inverted methylammonium lead iodide perovskite solar cells
14:45 - 15:00	<b>Hiroki Uratani</b> ( <i>The University of Tokyo</i> ), Koichi Yamashita
B2-O2	Inorganic Lattice Fluctuation Induces Charge Separation in Lead Iodide Perovskites: Theoretical Insights
15:00 - 15:15	<b>Satoshi Uchida</b> ( <i>The University of Tokyo</i> ), Tae Woong Kim, Ludmila Cojocar, Takashi Kondo, Hiroshi Segawa
B2-O3	Perovskite Solar Cells: Crystal Structure and Interface Architecture with High Resolution TEM Observations
15:15 - 15:30	<b>Simon Bretschneider</b> ( <i>Max-Planck-Institute for Polymer Research</i> ), Frédéric Laquai, Mischa Bonn
B2-O4	Trap-Free Hot Carrier Relaxation in Lead-Halide Perovskite
15:30 - 15:45	<b>Arthur Marronnier</b> ( <i>LPICM, CNRS, Ecole Polytechnique, Université Paris Saclay</i> ), Heejae Lee, Bernard Geffroy, Yvan Bonnassieux, Jacky Even, Guido Roma
B2-O5	Anharmonicity and Disorder in the Black Phases of CsPbI <sub>3</sub>
15:45 - 16:15	<b>Coffee Break</b>





16:15 - 16:30 B2-O6	<u>Jongchul Lim</u> ( <i>Photovoltaic and Optoelectronic Device Group, Department of Physics, Oxford University</i> ), Henry J. Snaith Effective Lateral Mobility and Diffusion Length Determined by Refractive Index Change of Perovskite at the Sub-Bandgap : Photoinduced Reflection Spectroscopy
16:30 - 16:45 B2-O7	<u>Shufeng Wang</u> ( <i>Physics Department, Peking University, Beijing, China</i> ) Revealing subgrain morphology in organolead perovskite films by spectroscopic method
16:45 - 17:00 B2-O8	<u>Manabu Sugimoto</u> ( <i>Kumamoto University</i> ), Jing-Shuang Dang, Wei-Wei Wang, Ryota Jono, Hiroshi Segawa Chemistries of Materials in Perovskite Solar Cells Revealed by Electronic-Structure Informatics
17:00 - 17:15 B2-O9	Ramon Arcas, Elena Mas-Marza, <u>Francisco Fabregat-Santiago</u> ( <i>Institute of Advanced Materials, Universitat Jaume I, Spain</i> ) Electrical properties of perovskite solar cells
<b>Session C2</b> Chair: Alex K-Y. Jen	
14:30 - 15:00 C2-IS1	<u>Ivan Turkevych</u> ( <i>Chemical Materials Evaluation and Research Base (CEREBA), AIST Central 5-2, Tsukuba, 305-8565, Japan</i> ), Said Kazaoui, Nikolai A. Belich, Aleksei Y. Grishko, Sergey A. Fateev, Andrey A. Petrov, Toshiyuki Urano, Shinji Aramaki, Sonya Kosar, Michio Kondo, Eugene A. Goodilin, Michael Graetzel, Alexey B. Tarasov Strategic advantages of reactive polyiodide melts for scalable perovskite photovoltaics
15:00 - 15:15 C2-O1	<u>Qing Shen</u> ( <i>The University of Electro-Communications, Japan</i> ), Chao Ding, Yaohong Zhang, Feng Liu, Shuichiro Fujino, Yuhei Ogomi, Taro Toyoda, Kenji Yoshino, Takashi Minemoto, Shuzi Hayase Charge Transfer Dynamics and Photovoltaic Properties of Perovskite Solar Cells: Effects of the Energy Level Alignment of Zn1-xMgxO Electron Selective Layer
15:15 - 15:30 C2-O2	<u>Badrou Reda Aïch</u> ( <i>Information and Communications Technologies Portfolio, National Research Council of Canada, Ottawa, ON, Canada, K1A 0R6, National Research Council of Canada, ON, Canada</i> ), Jianping Lu, Salima Alem, Neil Graddage, Raluca Movileanu, Eric Estwick, Ye Tao Sustainable ink formulated using non-toxic solvents for organic solar cells
15:30 - 15:45 C2-O3	<u>Pavao Andricevic</u> ( <i>École Polytechnique Fédérale de Lausanne EPFL</i> ), Xavier Mettan, Márton Kollár, Bálint Náfrádi, Andrzej Sienkiewicz, Tonko Garma, Klára Hernádi, László Forró, Endre Horváth Vertically aligned carbon nanotube-perovskite light emitting electrochemical cells
15:45 - 16:15	<b>Coffee Break</b>
16:15 - 16:30 C2-O4	<u>Shyam S. Pandey</u> ( <i>Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology</i> ), Anusha Pradhan, Maryala Saikiran, Shuzi Hayase Prospects and Challenges with Dye-Sensitized Solar Cells utilizing Far-red Sensitive Dyes and Cobalt Complex Redox Electrolyte
16:30 - 16:45 C2-O5	<u>Muhammad Akmal Kamarudin</u> ( <i>Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology</i> ), Yuhei Ogomi, Shen Qing, Taro Toyoda, Kenji Yoshino, Takashi Minemoto, Shuzi Hayase Introduction of "spike-like" conduction band of TiO2 compact layer for perovskite solar cells
16:45 - 17:00 C2-O6	<u>Ammar Khan</u> ( <i>Lahore University of Management Sciences</i> ), Muhammad Akmal Kamarudin, Sehrish Iqbal, Hafiyya Malik, Habib-ur Rehman, Timothy Wilkinson Liquid crystalline physical-gel electrolytes for stable dye sensitized solar cells
17:00 - 17:15 C2-O7	<u>Fengjiu Yang</u> ( <i>Institute of Advanced Energy, Kyoto University</i> ), HongEn Lim, Masashi Ozaki, Ai Shimazaki, Yuhei Miyauchi, Atsushi Wakamiya, Yasujiro Murata, Kazuanri Matsuda Roles of Polymer Layer in Interfacial Engineering Perovskite Solar Cells with High Photovoltaic Performance
<b>Session G3</b> Chair: Juan Bisquert	
17:15 - 17:45 G3-I1	<u>Nam-Gyu Park</u> ( <i>School of Chemical Engineering and Energy Frontier Laboratory, Sungkyunkwan University (SKKU), Suwon 440-746, Korea</i> ) Halide Perovskite Photovoltaics and X-ray Imaging



17:45 - 18:15	<u>Tsutomu Miyasaka</u> ( <i>Toin university of Yokohama</i> )
G3-I2	Towards development of heat tolerant and durable perovskite solar cells with stable high efficiency
18:15 - 18:30	<b>Closing Ceremony</b>

## Poster Contribution

015	<u>Masatoshi Yanagida</u> ( <i>National Institute for Materials Science(NIMS)</i> ), Md Bodiul Islam, Namrata Pant, Yasuhiro Shirai, Kenjiro Miyano Effect of NiOx Properties as Hole Transport Layer on Lead Halide Perovskite Solar Cells
024	<u>Quang-Duy Dao</u> ( <i>Division of Electrical, Electronic and Information Engineering, Graduate School of Engineering, Osaka University, Suita, Osaka, Japan</i> ), Akihiko Fujii, Ryotaro Tsuji, Masanori Ozaki Improving stability and efficiency of perovskite solar cell utilizing phthalocyanine-tetrabenzoporphyrin hybrid macrocycle hole transport layer
025	<u>Said Kazaoui</u> ( <i>National Institute of Advanced Industrial Science and Technology (AIST), Japan</i> ) Environmental Stability of Mixed Perovskite Solar Cells at 1 sun
029	<u>Pradeep R. Varadwaj</u> ( <i>The University of Tokyo</i> ), Arpita Varadwaj, Koichi Yamashita Halogen in Materials Design: Perovskite Solar Cell Semiconductors as Prototypes
042	<u>Kazuhiro Marumoto</u> ( <i>University of Tsukuba</i> ), Miki Namatame, Yuhei Ogomi, Shuzi Hayase Direct observation of dramatically enhanced hole formation in a perovskite-solar-cell material spiro-OMeTAD by Li-TFSI doping
068	<u>Putao Zhang</u> ( <i>Kyusyu institute of technology</i> ), Kengo Hamada, Gaurav Kapil, Fu Yang, Shuzi Hayase Application of a quartz crystal microbalance to measure interface structure between carbon and perovskite materials for carbon based perovskite solar cells
070	<u>Kumiko Yamamoto</u> ( <i>Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology</i> ), Satoshi Iikubo, Jun Yamasaki, Yuhei Ogomi, Shuzi Hayase First-principles study of partially substituted perovskite Solar Cells
078	<u>Chu Zhang</u> ( <i>Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology</i> ), Tingli Ma, Zhanglin Guo, Liguao Gao, Shuai Zhao Design and Synthesis of a New Lead-free Double Perovskite Cs <sub>2</sub> NaBiI <sub>6</sub>
079	<u>Hong Duc Pham</u> ( <i>School of Chemistry, Physics and Mechanical Engineering, Queensland University of Technology (QUT), 2 George Street, Brisbane, QLD-4001, Australia</i> ), Hongwei Hu, Zhifang Wu, Thu Trang Do, Luis K. Ono, Krishna Feron, Sergei Manzhos, Hongxia Wang, Nunzio Motta, Yeng Ming Lam, Yabing Qi, Sagar Motilal Jain, Prashant Sonar Novel Low Cost Triphenylamine Derivatives based Hole Transporting Organic Materials for Highly Efficient and Stable Perovskite Solar Cells
080	Yueh-Chien Lee, <u>Sheng-Yao Hu</u> ( <i>Department of Digital Technology Design, Tungfang Design University, Hunei, Kaohsiung, Taiwan</i> ), Cheng-Han Wu, Tzu-Fan Hsu Effects of Rose Bengal Dye on the Photovoltaic Performance of Dye-sensitized ZnO Solar Cell
081	<u>Mi-Ra Kim</u> ( <i>Dept. Polymer Science &amp; Engineering, Pusan National University</i> ) Photovoltaic Effects of TiO <sub>2</sub> Pastes for Low-Temperature Process for Dye-Sensitized Solar Cells
082	<u>Kengo Hamada</u> ( <i>Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology</i> ), Ryo Tanaka, Qing Shen, Taro Toyoda, Yuhei Ogomi, Shuzi Hayase Effect of TiO <sub>2</sub> surface passivation on perovskite solar cells
083	<u>Md Emrul Kayesh</u> ( <i>Graduate School of Pure and Applied Sciences, University of Tsukuba, Tsukuba, Ibaraki 305-8573, Japan</i> ), Towhid Hossain Chowdhury, Kiyoto Matsuishi, Ashraful Islam Effects of reducing salt on Sn-based perovskite films and their solar cell performance
084	<u>Yuta Shirogane</u> ( <i>Department of Applied Chemistry, Waseda University, Tokyo 169-8555, Japan</i> ), Suguru Tanaka, Takeo Suga, Hiroshi Segawa, Hiroyuki Nishide Perovskite Layer Formation with Polymer-Scaffold: Grain Structure Analysis and in-situ Conductive AFM Characterization



085	<u>Mayu Yamaguchi</u> ( <i>Department of Applied Chemistry, Waseda University, Tokyo, Japan</i> ), Kenichi Oyaizu, Hiroshi Segawa, Hiroyuki Nishide Arylamine Polymer as the Hole-Transporting Material for a Perovskite Solar Cell with 1 cm <sup>2</sup> Active Area
086	<u>Yoshiyuki Seike</u> ( <i>Aichi Institute of Technology</i> ), Daiki Tangiku, Hiroto Katsuta, Taichi Ishikawa, Tatsuo Mori Influence of Metal Contamination in the Organic Active Layer of the Organic Thin Film Solar Cell
087	<u>Molang Cai</u> ( <i>1Photovoltaic Materials Group, Center for Green Research on Energy and Environmental Materials, Japan</i> ), Ishida Nobuyuki, Liyuan Han, Takeshi Noda ELECTRICAL POTENTIAL DISTRIBUTION FOR HIGH PERFORMANCE PEROVSKITE SOLAR CELLS
089	<u>Zhanglin Guo</u> ( <i>Kyushu Institute of Technology, Japan</i> ), Chu Zhang, Liguao Gao, Tingli Ma Design and fabrication of two-dimensional materials based perovskite solar cells
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