

SYMPOSIUM ED8

Development and Integration of Organic and Polymeric Materials
for Thin-Film Electronic Devices
April 17 - April 21, 2017

Symposium Organizers

Bumjoon Kim, Korea Advanced Institute of Science and
Technology
Jian Li, Arizona State University
Biwu Ma, Florida State University
Xiaofan Ren, Dow Chemical (China)

Symposium Support

MilliporeSigma
Universal Display Corporation

Proceedings Statement

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* Invited Paper

SESSION ED8.1: Flexible Electronics I
Session Chairs: Bumjoon Kim and Biwu Ma
Monday Afternoon, April 17, 2017
PCC North, 100 Level, Room 129 B

1:30 PM *ED8.1.01

High-Frequency Organic Rectifiers through Interface Engineering [Changhee Lee](#); Seoul National Univ, Korea (the Republic of).

2:00 PM ED8.1.02

Conducting Organic Materials and Their Applications in Electronics [Fengling Zhang](#); Linköping University, Sweden.

2:15 PM ED8.1.03

High-Performance Copper Based Nanowire Transparent Electrodes for Flexible Thin-Film Electronics [Fan Cui](#); University of California, Berkeley, United States.

2:30 PM ED8.1.04

High-Performance Copper Nanowire/Graphene Hybrid Transparent Conducting Electrodes for Emerging Optoelectronic Devices [Yongu Lee](#); DGIST, Korea (the Republic of).

2:45 PM ED8.1.05

Transparent Electrodes Made of a Single Conductive Nanofiber—Working beyond Percolation [Mathieu Maillard](#); University of Lyon, France.

3:00 PM BREAK

3:30 PM ED8.1.06

Doped Polymer Semiconductors with Ultrahigh and Ultralow Work Functions for Ohmic Contacts [Peter Ho](#); National University of Singapore, Singapore.

3:45 PM ED8.1.07

Graphene Oxide/Graphene Stacking Transparent Conductive Electrodes for High Performance and Large Area Flexible Organic Light Emitting Diodes [Jinhong Du](#); Institute of Metal Research, Chinese Academy of Sciences, China.

4:00 PM ED8.1.08

Controlled Fabrication of Transparent Touch Sensitive Device via Inkjet Printing Polydopamine Nanoparticles on Flexible Substrate with Tunable Wetting Properties [Liang Liu](#); Binghamton University, United States.

4:15 PM ED8.1.09

Organo-Compatible, Single-Step Interface Engineering for All-Inkjet-Printed Transparent Organic Thin-Film Transistors on Flexible Platforms [Jewook Ha](#)^{1,2}; ¹Seoul National University, Korea (the Republic of); ²Seoul National University, Korea (the Republic of).

SESSION ED8.2: Flexible Electronics II

Session Chairs: Yi Liu and Biwu Ma
Tuesday Morning, April 18, 2017
PCC North, 100 Level, Room 129 B

10:30 AM *ED8.2.01

Adding Skin-Inspired Functions to Organic Electronic Materials and Devices [Zhenan Bao](#); Stanford University, United States.

11:00 AM *ED8.2.02

Viscoelastic Polymers for Stretchable Electronic Devices [Unyong Jeong](#); Pohang University of Science and Technology, Korea (the Republic of).

11:30 AM ED8.2.03

High-Efficiency Large-Area Flexible Organic Optoelectronics Using an Ultra-Thin Metal Electrode [Cheng Zhang](#)^{1,2}; ¹University of Michigan—Ann Arbor, United States; ²NIST & University of Maryland College Park, United States.

11:45 AM ED8.2.04

Nanoscale Chemical and Electrical Stability of Graphene-Covered Silver Nanowire Networks for Flexible Transparent Conducting Electrodes [Seong Heon Kim](#); Samsung Advanced Institute of Technology (SAIT), Korea (the Republic of).

SESSION ED8.3: Organic Semiconductors and Transistors

Session Chairs: Kenneth Hanson and Jian Li
Tuesday Afternoon, April 18, 2017
PCC North, 100 Level, Room 129 B

1:30 PM *ED8.3.01

Electronic Structure of Quasi-One-Dimensional and Two-Dimensional Pi-Conjugated Polymers—Design Principles for High Charge-Carrier Mobility Materials [Jean-Luc Bredas](#); Georgia Institute of Technology, United States.

2:00 PM *ED8.3.02

Design and Synthesis of Novel Electron Donors and Acceptors for High Performance Organic Electronic Materials [Yi Liu](#); Lawrence Berkeley National Laboratory, United States.

2:30 PM ED8.3.03

Facile Route to Control the Ambipolar Transport in Organic Semiconducting Polymer [Yun-Hi Kim](#); Gyeongsang National University, Korea (the Republic of).

2:45 PM ED8.3.04

Solution-Processed High Mobility and High Voltage Organic Thin Film Transistor [Andy Shih](#); Massachusetts Institute of Technology, United States.

3:00 PM BREAK

3:30 PM *ED8.3.05

BDOPV-Based Conjugated Polymers towards High Performance n-Type Polymer Field-Effect Transistors [Jian Pei](#); Peking University, China.

4:00 PM ED8.3.06

Synthesis and Field Effect Transistor of Covalent Organic Framework Thin Films [Dong Wang](#)^{1,2}; ¹Chinese Academy of Sciences, China; ²Institute of Chemistry, China.

4:15 PM ED8.3.07

Light-Melt Adhesive Based on Dynamic Carbon Frameworks in a Columnar Liquid-Crystal Phase [Shohei Saito](#); Kyoto University, Japan.

4:30 PM ED8.3.08

Surface-Directed Multi-Scale Assembly for Highly Aligned Conjugated Polymer Thin Films [Ying Diao](#); University of Illinois at Urbana-Champaign, United States.

4:45 PM ED8.3.09

Charge Transport in Layered Single-Crystalline Organic Transistors with Controlled Layer-Number Thickness [Takamasa Hamai](#); University of Tokyo, Japan.

SESSION ED8.4: Poster Session I
Tuesday Afternoon, April 18, 2017
8:00 PM - 10:00 PM
Sheraton, Third Level, Phoenix Ballroom

ED8.4.01

Study of the Degradation Mechanism of SiON-Based Thin Film Encapsulation for Organic Electronics [Woo Young Yang](#); Samsung Advanced Institute of Technology (SAIT), Korea (the Republic of).

ED8.4.02

Characterization of Gap State Related to Organic Semiconductor p-Doping [Julie Herrbach](#); University Grenoble Alpes, CEA LITEN, France.

ED8.4.03

Solution-Processable Tetrathienoacene (TTAR) Based Small Molecules for Organic Field Effect Transistor(OTFT) and Organic Photovoltaics (OPV) Applications [Pragya Priyanka](#); National Central University, Taiwan.

ED8.4.04

An Aza-Diels–Alder Route to Polyquinolines [Mehran J. Umerani](#); University of California, Irvine, United States.

ED8.4.05

Domain-Wall Dynamics in Organic Ferroelectric Thin Films—A Field Modulation Imaging Study [Yohei Uemura](#)^{1,2}; ¹University of Tokyo, Japan; ²National Institute of Advanced Industrial Science and Technology (AIST), Japan.

ED8.4.06

Air Stable High-Mobility Field-Effect Transistors with a Solution Sheared Diketopyrrolopyrrole-Based Polymer [Mike Hamsch](#); Technische Universität Dresden, Germany.

ED8.4.07

Wafer-Scale Microwire Transistor Array Fabricated via Evaporative Assembly [JaeHoon Park](#); Sungkyunkwan University, Korea (the Republic of).

ED8.4.08

Solid State Electrolyte Included Hybrid Electrochromic Devices and Interface Engineering [Xing Xing](#); Linköping University, Sweden.

ED8.4.09

High-Mobility Polymer Containing Semifluoroalkyl Side Chains for n-Type Organic Field Effect Transistors [Kwang Hun Park](#); Gyeongsang National University, Korea (the Republic of).

ED8.4.10

Madelung and Hubbard Interactions in Polaron Band Model of Doped Organic Semiconductors [Rui Qi Png](#); National University of Singapore, Singapore.

ED8.4.11

Preparation and Characterization of Ferroelectric Polymer Nanocomposites [Jinrong Cheng](#); Shanghai University, China.

ED8.4.12

Influence of Solvent and Additive Choices on the Crystalline Evolution of Organic Thin Films Detected by *In Situ* GIWAXS during Spin Coating [Eric F. Manley](#); Northwestern University, United States.

ED8.4.13

Correlation between Optical and Electrical Properties of Acid Treated PEDOT-PSS Films [Costel Constantin](#); James Madison University, United States.

ED8.4.14

Poly(4,4-di(2-Ethylhexyl)-Cyclopenta[2,1-b:3,4-b']-Dithiophene-alt-2,1,3-Benzothiadiazole) (PCPDTBT)—Type Copolymers Synthesized by Direct Arylation Polycondensation [Tina Keller](#); Bergische Universität Wuppertal, Germany.

ED8.4.15

Reduction of Thermo-Mechanical Stress of TSV Cu with Flexible Interfacial Layer-by-Layer Nanolayers [Daekyun Jeong](#); Kookmin University, Korea (the Republic of).

ED8.4.16

Tunable Optimization of oCVD PEDOT Films—From Electrochromic Displays to Energy Storage and Generation [Sean P. Arnold](#); University of Arizona, United States.

ED8.4.17

Nano-Confinement Control of the Morphology of Polyacetylene [Steluta A. Dinca](#); Syracuse University, United States.

ED8.4.18

Highly Conductive Graphene-Zinc Oxide Nanostructure for 3D-Printing Electronics [Ebrahim Chalangar](#)^{1,2}; ¹Linköping University, Sweden; ²Halmstad University, Sweden.

ED8.4.19

A Highly Stretchable, Transparent and Conductive Polymer [Yue Wang](#); Stanford University, United States.

ED8.4.20

Macromolecular Chemical Doping for Stable Graphene Electrode [Sung-Joo Kwon](#); POSTECH, Korea (the Republic of).

ED8.4.21

2D Nano-Trapping Architecture in a Flexible Electronic Synapse [Chang-Hyun Kim](#)^{1,2}; ¹Gwangju Institute of Science and Technology, Korea (the Republic of); ²Gwangju Institute of Science and Technology, Korea (the Republic of).

ED8.4.22

Synthesis and Characterizations of Fluorinated Sulfonated Poly(Arylene Ether Sulfone) Block Copolymers for the Applications of Polymer Electrolyte Membrane [Kyu Ha Lee](#); Chonbuk National University, Korea (the Republic of).

ED8.4.23

Electrically Pumped Exciton-Polaritons in Organic Light-Emitting Field-Effect Transistors [Arko Graf](#); Heidelberg University, Germany.

ED8.4.24

Engineered Exciton Diffusion Length and Device Efficiency in Highly Efficient Small Molecules Organic Semiconductors Using Solvent Vapor Annealing [Muhammad T. Sajjad](#); University of St. Andrews, United Kingdom.

ED8.4.25

High Performance Polymeric Gate Dielectrics for Solution Processible Metal-Oxide Semiconductor Thin-Film Transistors [Jae-Won Ka](#); KRICT, Korea (the Republic of).

ED8.4.26

Study of PVDF - TiO₂ Nanoparticle Composite Thin Films by XPS, SEM and EDS for Use in the Capacitive Storage of Energy [Randy Dillingham](#); Northern Arizona University, United States.

ED8.4.27

Proton Radiation Studies on Conjugated Polymer Thin Films [Harold Lee](#); Norfolk State University, United States.

ED8.4.28

Flexible and Ultralow-Power Organic Thin-Film Transistors using Hybrid Multilayer Dielectric Materials [Eun-Ah You](#); Korea Research Institute of Standards and Science (KRISS), Korea (the Republic of).

ED8.4.29

Preparation and Characterization of Non-Aqueous Gel Electrolyte for Tungsten Oxide Electrochromic Devices [Qi-Zhi Ye](#); National University of Tainan, Taiwan.

- ED8.4.30**
Stretchable Parallel Plate Capacitance Sensor Made from Novel Silver-Polymer Composite and Urethane Adhesive Jignesh Vanjaria; Arizona State University, United States.
- ED8.4.31**
Low-Voltage Polyelectrolyte-Gated Polymer Field-Effect Transistors Gravure Printed at High Speed on Flexible Plastic Substrates Quentin Thiburce; Imperial College London, United Kingdom.
- ED8.4.32**
Probing the Conductivity Peak of Organic Electrolyte Gated Transistors Robert N. Enright; Ripon College, United States.
- ED8.4.33**
Crystalline Orthogonal Self-Stratification in Spin-Coated Conjugated Polymer Thin Films Chris McNeill; Monash University, Australia.
- ED8.4.34**
Self-Assembled Supramolecular Nanowires with Amplified Chirality for High-Performance Chiro-Optical Sensing Inho Song; POSTECH, Korea (the Republic of).
- ED8.4.35**
Nanostructured PEDOT Polymer-Graphene Composite Structures for Flexible and Stretchable Electronics Applications Mohamed Serry; The American University in Cairo, Egypt.
- ED8.4.36**
Stable Molecular Memory Devices Based on Dithia-Porphyrin Monolayers Electrografted on Silicon Kavita Garg; Indian Institute of Science, India.
- ED8.4.37**
Fabrication of High-Mobility Organic Field-Effect Transistors Using Rubrene Single-Crystals and Few-Layer Large Scale Graphene Electrodes Sara Hussein; New Jersey City University, United States.
- ED8.4.38**
Spectroscopic Ellipsometry Characterization of Thin Organic Films and Devices for Organic Electronic Applications Jean-Paul Gaston; HORIBA Jobin-Yvon SAS, France.
- ED8.4.39**
Synthesis and Properties of Liquid Crystalline Organic Semiconductors Based on Metalloporphyrin Hyein Jung^{1,2}; ¹Korea Research Institute of Chemical Technology, Korea (the Republic of); ²Yonsei University, Korea (the Republic of).
- ED8.4.40**
Using Diels-Alder Chemistry for Tuning Interfacial Properties of Organic Semiconducting Materials Gregory J. Deye; Loyola University Chicago, United States.
- ED8.4.41**
Polarization-Induced Transport in Organic Field-Effect Transistors Amrit Laudari; University of Missouri, United States.
- ED8.4.42**
Molecular Orientation-Dependent Bias Stress Stability in n-Type Organic Transistors Byung Ho Moon; POSTECH, Korea (the Republic of).
- ED8.4.43**
 π -Conjugating Spacer Containing Copolymers Based on New Quinoidal Building Block for Organic Thin Film Transistors Kyoungtae Hwang; GIST, Korea (the Republic of).
- ED8.4.44**
Directed Assembly of Novel Amorphous Polymer Semiconductors via Electrohydrodynamic-Jet Printing—Studies on the Morphology and Polymer Field-Effect Transistor Character Yebyeol Kim; POSTECH, Korea (the Republic of).
- ED8.4.45**
Template-Synthesis of Conjugated Poly(3-Hexylselenophene) (P3HS) Nanofibers Using Femtosecond Laser Machined Fused Silica Templates Amit Verma; Texas A&M University, Kingsville, United States.
- ED8.4.46**
Impedance and Dielectric Spectroscopic Studies of Glyoxal Crosslinked Polyvinyl Alcohol and Its Application in Organic Field Effect Transistors Debdatta Panigrahi; IIT Kharagpur, India.
- ED8.4.47**
Ultrathin Single Bilayer Formation of Layered-Crystalline Organic Semiconductors as Induced by Frustration Shunto Arai; The University of Tokyo, Japan.
- ED8.4.48**
Structural Effects of Ionic-liquid Gating on Poly(3-hexylthiophene) (P3HT) Jesus Guardado; Stanford University, United States.
- ED8.4.49**
Solution-Processable Dithienothiophene Based Quinoidal N-Type Organic Semiconductors Sureshraj Vegeraju; National Central University, Taiwan.
- ED8.4.50**
High Detectivity Near-Infrared Organic Photodiode Do Young Kim; Oklahoma State University, United States.
- ED8.4.51**
Organic Metal Oxide Hybrid Films for Flexible Electronics Grzegorz Luka; Polish Academy of Sciences, Poland.
- ED8.4.52**
An Orthogonal Polymer Semiconductor Gel for Solution Tandem Electronics Han Wool Park^{1,5}; ¹Soongsil University, Korea (the Republic of); ⁵Soongsil University, Korea (the Republic of).
- ED8.4.53**
High Coverage Organic Crystals Developed by Bar Coating Method with Marangoni Effect for OFET Applications Paddy K. L. Chan; University of Hong Kong, Hong Kong.
- ED8.4.54**
High-Throughput Image Analysis of Fibrillar Thin Films in Polymeric Transistors Nils E. Persson; Georgia Institute of Technology, United States.
- ED8.4.55**
Hydrogen Bond Directed Self-Assembly of Molecular Donors for Organic Photovoltaics Ronald K. Castellano; University of Florida, United States.
- SESSION ED8.5: Electrophosphorescence and Beyond, A Special Program Celebration—20th Anniversary of Phosphorescent OLEDs I
Session Chairs: Jian Li, Biwu Ma and Xiaofan Ren
Wednesday Morning, April 19, 2017
PCC North, 100 Level, Room 129 B
- 8:00 AM OPENING REMARKS** By Jian Li, Arizona State University
- 8:15 AM *ED8.5.01**
Electrophosphorescent Light Emitting Devices—Challenges Ahead for the Coming Revolution in Displays and Lighting Stephen R. Forrest; University of Michigan, United States.
- 8:45 AM *ED8.5.02**
Polypyridyl Complexes of Ru(II) Thomas J. Meyer; University of North Carolina at Chapel Hill, United States.
- 9:15 AM *ED8.5.03**
Highly Efficient Phosphorescent OLEDs Jason Brooks; Universal Display Corporation, United States.
- 9:45 AM ED8.5.04**
Blue Emitting Square Planar Metal Complexes for Displays and Lighting Applications Jian Li; Arizona State University, United States.
- 10:00 AM BREAK**
- 10:30 AM *ED8.5.05**
Photophysics of Platinum Complexes with Tetradentate Ligands Chi-Ming Che^{1,2}; ¹University of Hong Kong, China; ²State Key Laboratory of Synthetic Chemistry, China.

11:00 AM *ED8.5.06

Photophysical Designing of Highly Efficient TADF Materials for OLEDs Based on Cu(I) and Ag(I) Compounds [Hartmut Yersin](#); University of Regensburg, Germany.

11:30 AM *ED8.5.07

Emissive Bis-Tridentate Ir(III) Metal Complexes—Photophysics and Applications [Yun Chi](#); National Tsing Hua University, Taiwan.

SESSION ED8.6: Electrophosphorescence and Beyond, A Special Program Celebration—20th Anniversary of Phosphorescent OLEDs II
Session Chairs: Jian Li, Biwu Ma and Xiaofan Ren
Wednesday Afternoon, April 19, 2017
PCC North, 100 Level, Room 129 B

1:30 PM *ED8.6.01

Studies of Structural Effects on Molecular Orientation of Organometallic Phosphors in Organic Light Emitting Diodes [Mark Thompson](#); University of Southern California, United States.

2:00 PM *ED8.6.02

Non-Perturbative Probes of Stability and Efficiency Droop in OLEDs [Marc Baldo](#); Massachusetts Institute of Technology, United States.

2:30 PM BREAK

3:30 PM *ED8.6.03

Organo- and Inorgano- Metal Halide Perovskite on High Brightness Light Emitting Diodes [Yang Yang](#); University of California, Los Angeles, United States.

4:00 PM *ED8.6.04

Beyond OLEDs—Electroluminescence from Semiconductor Quantum Dots [Jiangeng Xue](#); University of Florida, United States.

4:30 PM *ED8.6.05

Prospect for Organic Semiconductor Lasers-CW Lasing and Electrical Excitation [Chihaya Adachi](#)^{1,2,3}; ¹Kyushu University, Japan; ²Kyushu University, Japan; ³Kyushu University, Japan.

SESSION ED8.7: Poster Session II
Wednesday Afternoon, April 19, 2017
8:00 PM - 10:00 PM
Sheraton, Third Level, Phoenix Ballroom

ED8.7.01

Unlocking the Mystery of Organic Injection Laser and Roots to Achieve High Efficiencies in Organic Light Emitting Diodes [Amrita Dey](#); IIT Bombay, India.

ED8.7.02

The Influence of Lithium Additives in Small Molecule Light-Emitting Electrochemical Cells [Jason Slinker](#); The University of Texas at Dallas, United States.

ED8.7.03

Self-Doped Conducting Polymer Compositions with Tunable Work Function for Efficient Organic-Inorganic Hybrid Perovskite Light-Emitting Diodes [Soyeong Ahn](#); Pohang University of Science and Technology (POSTECH), Korea (the Republic of).

ED8.7.04

Predicting Electrothermal Behavior from Lab-Size OLEDs to Large Area Lighting Panels [Axel Fischer](#); TU Dresden, Germany.

ED8.7.05

An Alleviation of Roll-Off Behavior of Organic Light Emitting Diodes with Thermally Activated Delayed Fluorescent Materials by Adding Sate Mixing Agent via External Heavy Atom Effect [Hyung Suk Kim](#); Kyung Hee University, Korea (the Republic of).

ED8.7.06

The Study on the Interfacial Mixing of Solution Processed Organic Light Emitting Diodes [Min Chul Suh](#); Kyung Hee University, Korea (the Republic of).

ED8.7.07

Light Extraction Technology by Using Nano-Scattering Medium inside Organic Light Emitting Diodes [Nam Su Kim](#); Department of Information Display, Kyung Hee University, Korea (the Republic of).

ED8.7.08

Polymer Gating White Flexible Field-Induced Lighting Device [Junwei Xu](#); Wake Forest University, United States.

ED8.7.09

Improvement Lifetime of Thermally Activated Delayed Fluorescent Devices Using the Bipolar Host Material [Wook Song](#); Sungkyunkwan University, Korea (the Republic of).

ED8.7.10

Investigating the Interfacial Charge Injection Properties of Silver Nanowire Transparent Conductive Electrodes for Improving the Performance of Organic Light-Emitting Diodes [Jin-Woo Park](#); Yonsei University, Korea (the Republic of).

ED8.7.11

Vertical Electrolyte-Gated Organic Light-Emitting Diodes for Active Matrix Displays [Jiang Liu](#)^{1,2}; ¹Atom NanoElectronics, United States; ²University of California, Los Angeles, United States.

ED8.7.12

Color Stability and High Efficiency of Multi-Emissive White Phosphorescent Organic Light-Emitting Diodes Using Interfacial Mixed Layer [Geum Jae Yun](#); Hoseo University, Korea (the Republic of).

ED8.7.13

Highly Efficient Deep-Blue Electroluminescence from a Charge-Transfer Emitter with Stable Donor Skeleton [Wencheng Chen](#); City University of Hong Kong, China.

ED8.7.14

Reducing the Efficiency Roll-Off in WOLEDs Using Exciplex Host Systems [Yuan Liu](#); Dresden Integrated Center for Applied Physics and Photonic Materials (IAPP) and Institute for Applied Physics, Technische Universität Dresden, Germany.

ED8.7.15

Elimination of Plasmon Losses and Enhanced Light Extraction of Electrophosphorescent, Top-Emitting Organic Light-Emitting Devices Using a Metallic Sub-Electrode Grid [Yue Qu](#); University of Michigan, United States.

ED8.7.16

Understanding the Role of Charge Injection Layers on Operation of Polymer Light Emitting Electrochemical Cells [Seunghan Kim](#); Soongsil University, Korea (the Republic of).

ED8.7.17

Spin Coated Biphenylene Thin Films for Luminescent Electronic Devices Applications [Bibiana Rodriguez](#); Universidad Autonoma de Ciudad Juarez, Mexico.

ED8.7.18

Energy Level Alignment and Transport Gap Measurements of Molecular Layers Used in Organic Light-Emitting Diodes [Min-Jae Maeng](#); Kyung Hee University, Korea (the Republic of).

ED8.7.19

Enhanced Light Extraction Efficiency of OLEDs by Quasi-Periodic Diffractive Nanogratings [Yong-Cheol Jeong](#); Korea Institute of Industrial Technology, Korea (the Republic of).

SESSION ED8.8: Organic Photovoltaics I
Session Chairs: Bumjoon Kim and Biwu Ma
Thursday Morning, April 20, 2017
PCC North, 100 Level, Room 129 B

8:00 AM *ED8.8.01

Molecular and Interface Engineering for High-Performance Polymer and Perovskite Solar Cells [Alex K. Jen](#); University of Washington, United States.

8:30 AM ED8.8.02

High Performance Molecular Donors for Printed OPV-Synthesis and Scale-up [David J. Jones](#); University of Melbourne, Australia.

8:45 AM ED8.8.03

Towards a Better Understanding of Conjugated Polymer Blends with Non-Spherical Small Molecules—Coupling of Molecular Structure to Polymer Chain Microstructure [Alexander Ayzner](#); University of California, Santa Cruz, United States.

9:00 AM *ED8.8.04

Ternary Blend vs Terpolymer—Which Approach is Better for Polymer Solar Cells? [Wei You](#); University of North Carolina-Chapel Hill, United States.

9:30 AM ED8.8.05

Polymer—Molecule Solar Cells—How Molecular Miscibility Control Morphology and Performance [Harald Ade](#); North Carolina State University, United States.

9:45 AM ED8.8.06

Molecular Orientation Dependent Photon Harvesting and Exciton Dissociation in Organic Solar Cells [Kilwon Cho](#); Pohang University of Science and Technology, Korea (the Republic of).

10:00 AM BREAK

10:30 AM *ED8.8.07

Dielectric Properties of Polymer-Fullerene Blends for High Performance Solar Cells [Franky So](#); North Carolina State University, United States.

11:00 AM *ED8.8.08

Triplet Excitons from Singlet Fission—The Role of Intermolecular Interactions [Neil C. Greenham](#); University of Cambridge, United Kingdom.

11:30 AM ED8.8.09

Limits for Recombination in a Low Energy Loss Organic Heterojunction [S. Matthew Menke](#); University of Cambridge, United Kingdom.

11:45 AM ED8.8.10

Morphological and Carrier Recombination Effects in High-Efficiency Nonfullerene-Based Polymer Solar Cells [Yuljar Firdaus](#); King Abdullah University of Science and Technology (KAUST), Saudi Arabia.

SESSION ED8.9: Organic Photovoltaics II
Session Chairs: Bumjoon Kim and Jung-Yong Lee
Thursday Afternoon, April 20, 2017
PCC North, 100 Level, Room 129 B

1:30 PM *ED8.9.01

Nonfullerene Organic Solar Cells with Optimized Blend Morphology [Han Young Woo](#); Korea University, Korea (the Republic of).

2:00 PM *ED8.9.02

Material Design for Fullerene-Free Polymer Solar Cells with Over 12% Efficiency [Jianhui Hou](#); Institute of Chemistry, Chinese Academy of Sciences, China.

2:30 PM ED8.9.03

Synthesis of Acceptor Polymers for High Performance All-Polymer Solar Cells [Ergang Wang](#); Chalmers University of Technology, Sweden.

2:45 PM ED8.9.04

Nonfullerene Acceptors for Efficient Bulk-Heterojunction Solar Cells [Pierre Beaujuge](#); KAUST, Saudi Arabia.

3:00 PM BREAK

3:30 PM *ED8.9.05

Understanding the Degradation of High Performance Polymer-Fullerene Solar Cells [Christine Luscombe](#); University of Washington, United States.

4:00 PM ED8.9.06

Carbon Dangling Bonds in Photodegraded Polymer—Fullerene Solar Cells [Ruth Shinar](#); Iowa State University, United States.

4:15 PM ED8.9.07

Enhanced Thermal Stability of Ternary Bulk-Heterojunctions [Alexander Colmann](#); Karlsruhe Institute of Technology (KIT), Germany.

4:30 PM ED8.9.08

Controlling Packing Structure of Naphthalenediimide-Based Polymer Acceptors for High-Performance All-Polymer Solar Cells [Han-Hee Cho](#); KAIST, Korea (the Republic of).

4:45 PM ED8.9.09

Reduced Charge Carrier Trapping by Controlled Polymer Blend Phase Dynamics [Alexander Kunz](#); Max Planck Institute for Polymer Research, Germany.

SESSION ED8.10: Poster Session III
Thursday Afternoon, April 20, 2017
8:00 PM - 10:00 PM
Sheraton, Third Level, Phoenix Ballroom

ED8.10.01

New N-Type Acceptors for Non-Fullerene Organic Solar Cells via Modifying Alkyl Side-Chains [Bomee Jang](#); Korea University, Korea (the Republic of).

ED8.10.02

Photoelectric Behavior Depending on Surface Properties and Electrical Conductivity in PEDOT—PSS Electrode and Its Application via Stamping Transfer for Efficient Flexible Organic Photovoltaic Cells [Dong Hwan Wang](#); Chung-Ang University, Korea (the Republic of).

ED8.10.03

Regioregular D₁-A-D₂-A Terpolymer with Controlled Thieno[3,4-b] Thiophene Orientation for High Performance Polymer Solar Cells Processed with Nonhalogenated Solvents [Hyojung Hco](#); Daegu Gyeongbuk Institute of Science and Technology, Korea (the Republic of).

ED8.10.04

Novel Use of Copper Thiocyanate in Hybrid Organic/Inorganic Solar Cells [Flurin Eisner](#); Imperial College London, United Kingdom.

ED8.10.05

Food Additive—Key to Environmentally Friendly, Efficient, Blade-Coated Polymer Solar Cells [Yuan Xiong](#); North Carolina University, United States.

ED8.10.06

Azasiline-Based TADF Emitters for Blue Organic Light Emitting Diodes [Soon-Ki Kwon](#); Gyeongsang National University, Korea (the Republic of).

ED8.10.07

The Effect of Polymer Thickness in Tandem Polymer-Perovskite Photovoltaics [Fatemeh Rahimi](#); University of South Florida, United States.

ED8.10.08

High Efficiency Hybrid Small-Molecule Solar Cells with Fullerenes as the Light Absorbing Materials [Wai Yu Sit](#); Imperial College London, United Kingdom.

ED8.10.09

Subgap Optical Absorption and Trap Density Estimation of Bulk Heterojunction by Photothermal Deflection Spectroscopy [Sin Hang Cheung](#); Hong Kong Baptist University, Hong Kong.

ED8.10.10

Quantifying the Increased Excited State Polarizability in Polymer—Fullerene Blends via Electroabsorption [Erik D. Klump](#); North Carolina State University, United States.

ED8.10.11

Hole Transporting Layers of *In Situ* Synthesized Inorganic Nano Materials onto Graphene Sheets in Organic Solar Cells [Ye-Jin Jeon](#); GIST, Korea (the Republic of).

ED8.10.12

Transport Effects on Capacitance-Frequency Analysis for Defect Characterization in Organic Photovoltaic Devices [Liang Xu](#); University of Texas at Dallas, United States.

ED8.10.13

A “Roller-Wheel” Pt-Containing Small Molecule that Outperforms Its Polymer Analogs in Organic Photovoltaics [Yang Qin](#); University of New Mexico, United States.

ED8.10.14

A Facile Molecularly Engineered Metal Phthalocyanine as Hole Transport Materials for Planar Perovskite Solar Cells with Enhanced Performance and Stability [Ma Dian](#); South University of Science and Technology, China.

ED8.10.15

Concentration-Dependent Pyrene-Driven Self-Assembly for the Improved Interconnectivity in Benzodithiophene (BDT)-Thienothiophene (TT)-Pyrene Copolymers [Minjun Kim](#); POSTECH, Korea (the Republic of).

ED8.10.16

Effects of Interaction of Nonfullerene Acceptor and Low-Bandgap Donor on the Efficient Organic Solar Cells [Xueping Yi](#); North Carolina State University, United States.

ED8.10.17

Tetra-Alkyl-Substituted Copper (II) Phthalocyanine as Dopant-Free Hole-Transport Layer for Planar Perovskite Solar Cells with Enhanced Stability [Tuo Liu](#); South University of Science and Technology of China, China.

ED8.10.18

Isoindigo-Based Thermocleavable Polymers for Solar Cells [Kim Bini](#); Chalmers University of Technology, Sweden.

ED8.10.19

Thionated Perylene Diimides as Promising Electron Acceptors in Organic Photovoltaics [Ajara A. Rahman](#); University of Utah, United States.

ED8.10.20

P-Type NiO Thin Films as an Anode Buffer Layer in P₃HT—PCBM Bulk Hetero-Junction Solar Cells Deposited by Sputtering [Jwayeon Kim](#); Hoseo University, Korea (the Republic of).

ED8.10.21

Critical Factors that Affect Complex Morphology and Device Performance of High-Efficiency Fullerene-Free Organic Solar Cells [Long Ye](#); North Carolina State University, United States.

ED8.10.22

Device-Independent Screening Methods for Evaluating the Technological Relevance of Organic Semiconductor Materials [Bryon W. Larson](#); National Renewable Energy Laboratory, United States.

ED8.10.23

Regioregular Low Bandgap Copolymer with Controlled Thieno[3,4-b]Thiophene Orientation for High Efficiency Polymer Solar Cells [Honggi Kim](#); DGIST, Korea (the Republic of).

ED8.10.24

Degradation of Organic Semiconductors Part II—Pathways from Device Fabrication to Extended Ambient Exposure [Erin L. Ratcliff](#); University of Arizona, United States.

ED8.10.25

High-Performance Conjugated Terpolymers-Based Organic Bulk Heterojunction Solar Cells [Xiaobo Sun](#); Beihang University, China.

ED8.10.26

Effect of Interchain Ordering on Electronic States and Photovoltaic Performance in Conjugated Polymer Blend Based Organic Solar Cells [Naresh Chandrasekaran](#)^{1,3,2}; ¹IITB-Monash Research Academy, India; ²Indian Institute of Technology, Bombay, India; ³Monash University, Australia.

ED8.10.27

Achieving High Performance Non-Fullerene Organic Solar Cells through Tuning the Numbers of Electron Deficient Building Blocks of Molecular Acceptors [Lei Yang](#); University of Chinese Academy of Sciences, China.

ED8.10.28

Multifunctional Luminescent Down-Shifting Nanotemplates for Advanced Photovoltaics [Minwoo Nam](#); Kyung Hee University, Korea (the Republic of).

ED8.10.29

A Study of Illumination-Dependent Ideality Factor and Voltage-Dependent Carrier Collection of PTB7:PC₇₁BM Solar Cells [Mihirsinh Chauhan](#); Pandit Deendyal Petroleum University, India.

ED8.10.30

Novel Architectures in Semiconducting Polymers for Organic Photovoltaics [Elizabeth L. Melenbrink](#); University of Southern California, United States.

ED8.10.31

Organic “Push-Pull” Semiconductors—Illumination on Degradation [Kristen E. Watts](#); University of Arizona, United States.

ED8.10.32

Post-Processing Solvent Vapor Annealing in Bulk-Heterojunction Solar Cells with Molecular Donors [Maxime Babics](#); KAUST, Saudi Arabia.

ED8.10.33

Revealing Donor-Acceptor Electronic Interactions in Bulk Heterojunction Solar Cells with Ultra-Low Dosages of Fullerene [Carr Hoi Yi Ho](#); Hong Kong Baptist University, Hong Kong.

ED8.10.34

Backbone-Extended Donor-Acceptor Conjugated Copolymers for Highly-Efficient Organic Solar Cell [Jisoo Shin](#); POSTECH, Korea (the Republic of).

SESSION ED8.11: Hybrid Interfaces and Devices

Session Chairs: Jian Li and Jiangeng Xue

Friday Morning, April 21, 2017

PCC North, 100 Level, Room 129 B

8:30 AM ED8.11.01

Synthesis of Polymer Donor Materials for Organic Photovoltaics—New Material Development and Existing Material Scaling-Up [Bing Xu](#); Georgia Institute of Technology, United States.

8:45 AM *ED8.11.02

Perovskite Solar Cell Research Progress on Degradation Mechanisms, Reproducible Fabrication and Scaling Up [Yabing Qi](#); Okinawa Institute of Science and Technology Graduate University (OIST), Japan.

9:15 AM ED8.11.03

Pre- and Post-Treatments Free and Highly Robust Hole Transport Layer based on a New Approach of Alcohol Based Nickel Oxide for High Performance Organic Photovoltaics [Wallace C. Choy](#); University of Hong Kong, China.

9:30 AM ED8.11.04

Light-Soaking Free Inverted Polymer Solar Cells with Efficiencies over 10% by Compositional and Surface Modifications of the Metal Oxide Layer [Tao Wang](#); Wuhan University of Technology, China.

9:45 AM ED8.11.05

Air-Processable and Scalable Formation of High Quality Organic Films on Water Substrate via Spontaneous Spreading Phenomenon [Jonghyeon Noh](#); KAIST, Korea (the Republic of).

10:00 AM BREAK**10:30 AM *ED8.11.06**

Light Harvesting Polymers for Energy Conversion and Solar Fuels [Kirk S. Schanze](#); University of Texas, San Antonio, United States.

11:00 AM ED8.11.07

Modulating Electron Transfer Dynamics at Dye-Semiconductor Interfaces via Self-Assembled Bilayers [Kenneth Hanson](#)^{1,2}; ¹Florida State University, United States; ²Florida State University, United States.

11:15 AM ED8.11.08

Photoactive Molecular Modification of Conductive Oxide Surfaces—The Role of Surface Electronics in Organic Electronic Devices Iris Visoly-Fisher^{1,2}; ¹Ben-Gurion University of the Negev, Israel; ²Ben-Gurion University of the Negev, Israel.

11:30 AM ED8.11.09

Oxidative Chemical Vapor Deposition of Polymers for Thin-Film Photovoltaic Devices with Enhanced Efficiency and Lifetime Won Jun Jo; Massachusetts Institute of Technology, United States.

11:45 AM ED8.11.10

Self-Aligned Polyelectrolyte Monolayers for Interface Doping of Organic Semiconductor/Metal Contacts Lay-Lay Chua; National University of Singapore, Singapore.

SESSION ED8.12: Organic Light Emitting Diodes

Session Chairs: Jian Li and Xiaofan Ren

Friday Afternoon, April 21, 2017

PCC North, 100 Level, Room 129 B

1:30 PM ED8.12.01

Ultrahigh-Efficiency Solution-Processed Small-Molecule Organic Light-Emitting Diodes Using Simple Structure Tae-Woo Lee; Seoul National University, Korea (the Republic of).

1:45 PM ED8.12.02

Direct Observation of Spin States Involved in Organic Electroluminescence Based on Thermally Activated Delayed Fluorescence Vladimir Dyakonov; University of Wuerzburg, Germany.

2:00 PM ED8.12.03

Thermally Activated Delayed Fluorescence Using a Trifluorotoluene Acceptor Core and Carbazole Donor Units Simone Lenk; IAPP, Germany.

2:15 PM ED8.12.04

Triazolobenzothiadiazole-Based Materials for Near-Infrared Polymer Light-Emitting Diodes Petri H. Murto; Chalmers University of Technology, Sweden.

2:30 PM ED8.12.05

High-Performance Light-Emitting Devices Based on Novel Materials Dawei Di; University of Cambridge, United Kingdom.

2:45 PM ED8.12.06

Host Materials for Blue Thermally Activated Delayed Fluorescent Organic Light-Emitting Diodes Simultaneously Exhibiting High Efficiency and Stability Soo-Ghang Ihn; Samsung Advanced Institute of Technology, Samsung Electronics Co., LTD, Korea (the Republic of).

3:00 PM BREAK

3:30 PM ED8.12.07

Role of Triplet Localization in Metal-Free Room-Temperature Dual Singlet-Triplet OLED Emitters John Lupton; University of Regensburg, Germany.

3:45 PM ED8.12.08

Efficient Triplet Fusion to Singlet Excitons in Organic Light-Emitting Diodes Le Yang; University of Cambridge, United Kingdom.

4:00 PM ED8.12.09

Improved Device Stability of Organic Light-Emitting Devices with Solution-Processed Electron or Hole Injection Layers Yong-Jin Pu; Yamagata University, Japan.

4:15 PM ED8.12.10

Electrolyte Gated Polymer Light-Emitting Diodes Huaping Li; Atom Nanoelectronics, United States.