European Materials Research Society

2024 Spring Meeting

May 27 - 31 / Strasbourg Convention Centre

SYMPOSIUM B

Advancing sustainable organic photovoltaics: from experiments and materials to applications and device models

Symposium Organizers:

Feng GAO, Department of Physics, Chemistry and Biology (IFM), Linköping University, Sweden

Hongzheng CHEN, Zhejiang University, Department of Polymer Science and Engineering, P. R. China

Vida ENGMANN, Mads Clausen Institute, Center for Advanced Photovoltaics and Thin-Film Energy Devices (CAPE), University of Southern Denmark

Xabier RODRIGUEZ-MARTINEZ (Main organizer), Institute for Physical Chemistry, Heidelberg University, Germany

ROYAL SOCIETY OF CHEMISTRY

OPV

Monday May 27

B01_Novel materials development I

AMSTERDAM - GROUND FLOOR

Chairperson(s) : HUANG Fei

09:00	319	INV	Chlorine-mediated organic conjugated materials and quasi-planar heterojunction devices	**HE Feng**
09:30	3029	INV	Molecular Design for High Efficiency Organic Solar Cells	**WANG Ergang**

Monday May 27

B02_Novel materials development II

AMSTERDAM - GROUND FLOOR

Chairperson(s) : CHEN Yongsheng

10:30	596	INV	Development of n-Type Conjugated Materials for High-Performance Organic Solar Cells	**HUANG Fei**
11:00	2611		Impact of molecular weight on the solid state structure in semiconducting polymers for photovoltaics	**SANVITI Matteo**
11:15	2960		Understanding the mechanisms behind fill factor losses in organic solar cells	**SALADINA Maria**

Monday May 27

B03_Processing I

AMSTERDAM - GROUND FLOOR

Chairperson(s) : FREY Gitti

14:00	432	INV	Additive-free Organic Solar Cells Processed from a Biorenewable Solvent	**Nguyen Thuc-Quyen**
14:30	143	INV	Biorenewable Solvents for Organic Photovoltaics	**PANIDI Julianna**
15:00	2955		Bilayer and ternary organic solar cells with improved open-circuit voltage processed from non-halogenated solvents	**RATH Thomas**

15:15	2605		Structural control of semiconductor polymer D18 used in organic photovoltaics	**ASATRYAN Jesika**
15:30	2166		Sustainable Solvent Selection for Greener OPVs: A reduced carbon footprint approach through biomass-derived terpenes	**CORZO Daniel**

Monday May 27

B04_Processing II

AMSTERDAM - GROUND FLOOR

Chairperson(s) : CHEN Hongzheng

16:30	1689	INV	High performance flexible transparent metal grid electrodes for organic photovoltaics	**HATTON Ross**
17:00	787		A polymeric two-in-one electron transport layer and transparent electrode for organic optoelectronic devices	**LIU Tiefeng**
17:15	1838		Developing organic solar cells with promisingly high efficiency and stability	**LI Ning**
17:30	3046		Vertical phase separation, and its impact on performance asymmetry of laminated semi-transparent indoor OPVs	**BEKET Gulzada**

Tuesday May 28

B05_Mechanical and photostability I

AMSTERDAM - GROUND FLOOR

Chairperson(s) : SHOAEE Safa

09:00	1918	INV	The dark saturation current density in organic solar cells	**DEIBEL Carsten**
09:30	615	INV	Key Impact of Molecular Structure and Orientation of Non-Fullerene Acceptors on Organic Photovoltaic Performance	**KIM Ji-Seon**

Tuesday May 28

B06_Mechanical and photostability II

AMSTERDAM - GROUND FLOOR

Chairperson(s) : HATTON Ross

10:30	2930	INV	SnO2 as electron transport layer for highly performing organic solar cells	**LOI Maria Antonietta**
11:00	2170		Impact of Alkyl Linker Length in Carbazole-Based Self-Assembled Monolayers on the Performance of Organic Solar Cells	**CHEN Qiaonan**
11:15	1775		Stabilization of high-performing NFA-based organic solar cells using naturally occurring antioxidant	**ATAJANOV Rovshen**
11:30	1905		Globally Deployed Outdoor Stability Platform for Emerging Photovoltaics	**MARTI Gibert-Roca**
11:45	2046		Efficient single component organic photovoltaics with bright intramolecular charge transfer states	**MULLER Jolanda**

Tuesday May 28

B07_Active layer morphology I

AMSTERDAM - GROUND FLOOR

Chairperson(s) : WANG Ergang

14:00	3107	INV	Precise and Scalable Synthesis of Conjugated Polymers	**HUANG Hui**
14:30	1349	INV	Following BHJ phase behavior and phase morphologies using selective staining and electron microscopy	**FREY Gitti**
15:00	725		Solid Additives and Morphology Control in Photovoltaic Cells	**YU Runnan**
15:15	561		Simulation of Morphology Formation in Organic Photoactive Layers	**SIBER Maxime**
15:30	621		Understanding of the relationship between the ink rheological property and film morphology in the printed organic solar cells	**LUO Qun**
15:45	2096		Explaining the Open-Circuit Voltage Roll-Off in Organic Solar Cells	**GÖHLER Clemens**

Tuesday May 28

B08_Active layer morphology II

AMSTERDAM - GROUND FLOOR

Chairperson(s) : DE CASTRO Catherine

16:30	2603	INV	Autonomous Strategies to Optimize Organic Photovoltaics	**BRABEC Christoph J.**
17:00	1780	INV	High-performance all-polymer solar cells	**SUN Yanming**
17:30	2992		Fill-factor limit of organic solar cells	**ZHANG Huotian**
17:45	1532		Filtration as a Simple and Facile Approach to High Stability Organic Solar Cells	**YANG Emily J.**
18:00	647		Extracting Charge Carrier Mobility in Organic Solar Cells through Space-Charge-Limited Current Measurements	**Yin Hang**

Wednesday May 29

B09_Active layer morphology III

AMSTERDAM - GROUND FLOOR

Chairperson(s) : RIERA-GALINDO Sergi

08:45	2641	INV	Homo- and Heteromolecular interactions and their relevance for Morphological and Mechanical Stability of Non-Fullerene Organic Solar Cells	**ADE Harald**
09:15	2759	INV	Material Design and Device Engineering for Efficient Organic Photovoltaic Cells	**HOU Jianhui**

Wednesday May 29

B10_Device physics and photophysics I

AMSTERDAM - GROUND FLOOR

Chairperson(s) : NELSON Jenny

10:30	2437	INV	The Superposition Principle and the Importance of the Photoshunt in Organic and Perovskite Solar Cells	**KIRCHARTZ Thomas**
11:00	3053	INV	Illuminating The Dark Side Of Triplet State And Its Role On VOC In PM6:o-IDTBR Solar Cells	**SHOAEE Safa**
11:30	103	INV	Intermolecular strategy to reduce the electron-vibration coupling for high-performance organic solar cells	**ZUO Lijian**

Wednesday May 29

BP01_Poster Session

ETOILE - FIRST FLOOR

13:45	02_1260	105	02_1260 A new non-radiative recombination site in non-fullerene small molecules	**YANG Bei**
13:45	03_1511	105	03_1511 Machine-Learning Driven Materials Search for Organic Photovoltaics	**GAUL Christopher**
13:45	07_2045	105	07_2045 Design and development of lanthanoid-based luminescent solar concentrators.	**BOTTARO Gregorio**

13:45	08_2089	105	08_2089 Bright lanthanide supramolecular cages for highly transparent luminescent solar concentrators: from molecule to material	**MOTTA Irene**
13:45	10_2205	105	10_2205 Advancing Polymer Synthesis: Continuous Flow Chemistry for Precision in Donor-Acceptor Conjugated Polymers with Optoelectronic Properties.	**HERMOSILLA Hermosilla**
13:45	11_2221	105	11_2221 Development of Wide Bandgap Polythiophene Polymers with Deep-lying HOMO Energy Level and Reduced ? for Improving Photovoltaic Efficiency	**SU Li-Yun**
13:45	15_2560	105	15_2560 Optical and electrical modelling of colored PV cells. Part 1: effect of the colored layers	**MOTTA Irene**
13:45	16_2665	105	16_2665 Molecular Design of Completely Non-fused Acceptors with Simple Structure for Efficient Organic Photovoltaic Cells	**YANG Ni**
13:45	17_2673	105	17_2673 Cathode interlayer material design for efficient organic photovoltaic cells	**YU Yue**
13:45	18_2786	105	18_2786 Optimizing light harvesting efficiency with innovative novel linear carbon chain-based dyes: A computational investigation	**FORTE Giuseppe**
13:45	20_2827	105	20_2827 Inorganic cesium lead mixed halide based perovskite solar materials	**FRITZ Benjamin**
13:45	21_2889	105	21_2889 Multi-technique investigation into lead halide perovskite degradation pathways under electric field	**NGUYEN Linh Lan**
13:45	22_2925	105	22_2925 Enhancing fully sublimed perovskite solar cell efficiencies: Insights from Cation Co-sublimation in Vacuum Deposition	**MOEINI Arghanoon**
13:45	24_3017	105	24_3017 BODIPY-containing D- p-A type sensitized stable dye-TiO2 photocatalyst for H2 production under Vis-NIR light	**WATANABE Motonori**
13:45	27_338	105	27_338 Study on photovoltaic performance of solid-state dye-sensitized solar cells using biscarbazole-based hole-transporting polymers with different structural characteristics and moldeuclar weights	**KWON Younghwan**
13:45	28_370	105	28_370 AFM for monitoring interphase interfaces of solar cells	**MURATOVA Ekaterina**
13:45	29_404	105	29_404 Energy Yield Modelling of Perovskite/ Silicon Tandem Photovoltaics: Degradation and Total Lifetime Energy Yield	**OROOJI Seyedamir**

13:45	32_650	105	32_650 Unraveling the reasons behind lead phthalocyanine acting as a good absorber for near-infrared sensitive devices	**ONOE Jun**
13:45	33_663	105	33_663 Imaging Spectroscopic Ellipsometry (ISE) - New Approaches in Optical Characterization of Methylamonium-Lead-Bromide-Perovskite Microcrystals	**THIESEN Peter H.**
13:45	34_685	105	34_685 Ion-Exchange Resin for 100% Lead Recovery from Perovskite Solar Cells	**YAZAWA Ruka**
13:45	36_873	105	36_873 Morphology optimization for enhanced detectivity in near-infrared organic photodetectors	**CHO Kyounguk**
13:45	38_896	105	38_896 Low-Cost and Simple Thermal Evaporation for Quasi-Interdigitated Back-Contact Structured Perovskite Solar Cells	**GANTUMUR Munkhtuul**
13:45	39_899	105	39_899 Vacuum Deposited Cesium and Rubidium Halides Intercalation Strategy for High Stable Perovskite Solar Cells	**SHAHIDUZZAMAN Md**
13:45	40_913	105	40_913 Ionic Liquid-Assisted Ambient Air Bar-Coating Fabrication of Perovskite Film for Highly Stable Solar Cells	**NAKAHARA Yugo**
13:45	14_2498	105	Effect of Charge Transport Layers and applied potential on the impedance spectra in CH3NH3PbI3 perovskite solar cells	**KHALIFA Marouan**

Thursday May 30

B11_Device physics and photophysics II

AMSTERDAM - GROUND FLOOR

Chairperson(s) : CHEN Hongzheng

09:00	3032	INV	Exploring charge pair generation in single-component organic photovoltaic devices	**NELSON Jenny**
09:30	3075	INV	Organic Semiconductor Heterojunctions for Solar Energy Conversion	**LAQUAI Frédéric**

Thursday May 30

B12_High-throughput experimentation and machine-learning

AMSTERDAM - GROUND FLOOR

Chairperson(s) : SUN Yanming

10:30	88	INV	Revealing Polymer Solution Aggregate Structures and Film Formation Kinetics on BHJ Morphology of Organic Solar Cells	**HAN Yanchun**
11:00	3058		Enhancing Organic Photovoltaics Through Mass Customization: Roll-to-Roll Fabrication and Machine Learning-Driven Data Analysis	**VAK Doojin**
11:15	1527		Unraveling the thickness dependent performance and stability of ultranarrow-bandgap organic solar cells via high-throughput experimentation	**TORIMTUBUN Alfonsina Abat Amelenan**
11:30	1370		Steps Towards the Development of Organic/Silicon Tandem Solar Cells in a 3-Terminal Design	**GUEUNIER-FARRET Marie**
11:45	1213		Frontier Energy Levels Prediction of Organic Semiconductors Using Machine Learning	**BERTRANDIE Jules**

Thursday May 30

B13_Building integration and advanced uses of OPV I

AMSTERDAM - GROUND FLOOR

Chairperson(s) : PANIDI Julianna

14:00	1575	INV	Design Rules for Organic Rainbow Solar Cells	**CAMPOY-QUILES Mariano**
14:30	331	INV	Monolithic Organic/Perovskite Tandem Solar Cells	**YIP Angus Hin-Lap**
15:00	2949		On the value of device characterization for the optimization of solar cells	**CHRISTEN Leonard**
15:15	2126		Impact of light intensity, bias voltage, and junction quality on the external quantum efficiency of organic tandem solar cells	**CABAS VIDANI Antonio**
15:30	1317		Strategies for “Voc-Increased” Ternary / Quaternary Blended OSCs	**Zhan Chuanlang**
15:45	979		Improved Light Utilization Efficiency for a Semitransparent Organic Solar Module Using a Multilayer Back-Electrode as Infrared Mirror	**PAP Leonie**

Thursday May 30

B14_Building integration and advanced uses of OPV II

AMSTERDAM - GROUND FLOOR

Chairperson(s) : RODRÍGUEZ-MARTÍNEZ Xabier

16:30	3094	INV	High performance flexible OPV and its application studies for wearable devices	**CHEN Yongsheng**
17:00	2969	INV	Assessing the potential of organic solar cells for space applications	**TROSHIN Pavel**
17:45	1816		Organic Solar Mini-Modules with More Than 5000 V Open Circuit Voltage: Fabrication, Characterization and Application	**JIANG Ershuai**