European Materials Research Society

2024 Spring Meeting

May 27 - 31 / Strasbourg Convention Centre

SYMPOSIUM T

Doping in organic semiconductors: fundamentals, materials and applications

Symposium Organizers:

Jan Anton KOSTER, Zernike Institute for Advanced Materials,
University of Groningen, the Netherlands

Mario CAIRONI, Center for Nano Science and Technology -
Istituto Italiano di Tecnologia, Milano, Italy

Martijn KEMERINK (Main organizer),Institute for Molecular Systems Engineering
and Advanced Materials (IMSEAM), Heidelberg University, Germany

Sergi RIERA-GALINDO, Institute of Materials Science of Barcelona
(ICMAB-CSIC), Barcelona, Spain

Monday May 27

T01_Doping in organic semiconductors Ia

BOSTON - 1ST FLOOR

Chairperson(s) : KEMERINK Martijn

08:45	2524	INV	Structure-Property-Performance Relationships of Self-doped Conjugated Polymers	**Nguyen Thuc-Quyen**
09:15	74		Sterically-Hindered Molecular p-Dopants Promote Integer Charge Transfer in Organic Semiconductors	**CHAROUGHCHI Somaiyeh**
09:30	182		Anion exchange doping of oriented regioregular poly(3-hexylthiophene): an effective strategy to stabilize thermoelectric properties	**GUCHAIT Shubhradip**
09:45	342		Dual-emitting Boron and Nitrogen Doped Molecular Ribbons for Highly Stable Light-emitting Electrochemical Cells	**CAVINATO Luca Maria**

Monday May 27

T02_Doping in organic semiconductors Ib

BOSTON - 1ST FLOOR

Chairperson(s) : RIERA-GALINDO Sergi

10:30	270	INV	Noval approaches for doping of small-molecule semiconductors	**LEO Karl**
11:00	358		Counterion docking: a general approach to reducing energetic disorder in doped polymeric semiconductors	**DENG Xin-Yu**
11:15	509		Unraveling Charge Carrier Transport in conducting polymer PEDOT by ab initio Molecular Dynamics: Exploring Polaron Mobility, Trapping and Hopping Rates	**ZAHABI Najmeh**
11:30	345	INV	Molecular Doping as Key Enabler for Boosting the Performance of Organic Photovoltaics	**ANTHOPOULOS Thomas**

Monday May 27

T03_Doping in organic semiconductors Ic

BOSTON - 1ST FLOOR

Chairperson(s) : KEMERINK Martijn

13:45	447	INV	Chemical and Electrochemical Doping of Dense Networks of Semiconducting Single-Walled Carbon Nanotubes	**ZAUMSEIL Jana**
14:15	552		Systematic study of the effect of electronic doping on the thermal conductivity of semiconducting polymers for thermoelectrics	**JIALI Guo**
14:30	664		Combining Hansen Solubility Parameters and GIWAXS to Build a Comprehensive Guide for Processing Doped Conjugated Polymers.	**ROSAS Diego**
14:45	351		Solubilizing Benzodifuranone-based Conjugated Copolymers with Single Oxygen Containing Branched Side Chains	**Hinojosa Diego R.**
15:00	709		Selective reduction in cocrystal systems: A new approach toward molecular conductors	**KIM Hye Soo**
15:15	485	INV	Molecular doping for boosting mobility of emerging transistors	**NOH Yong-Young**

Monday May 27

TP01_Poster session

ETOILE - FIRST FLOOR

16:30	01_116	120	01_116 Exploring Multivalued Logic Circuits through Heterojunction Thin-Film Transistors for High-Density Information Computing	**YOO Hocheon**
16:30	02_1184	120	02_1184 Development of white OLEDs for On-Silicon Displays (OLED microdisplays)	**CHO Nam Sung**
16:30	03_1195	120	03_1195 Electron Trapping Group Induced Enhancement in Photoresponses of Organic Field-Effect Transistors	**SHAHARUKH Sk**
16:30	04_1421	120	04_1421 Impact of side chain and backbone engineering on thermoelectric performances in sequentially-doped and oriented n-type polymers	**GUCHAIT Shubhradip**
16:30	05_1436	120	05_1436 A p-terphenyl single crystal growth using the VGF technique assisted by axial vibrational control method.	**AVETISOV Roman**

16:30	06_1731	120	06_1731 Phase equilibrium in the 8-hydroxyquinoline/8-hydroxyquinolinolato-lithium system	**AVETISOV Roman**
16:30	07_1948	120	07_1948 Engineering the Solid-State Aggregates in Brickwork Stacks of n-type Semiconductors: A Way to Achieve High Electron Mobility	**GIRI Indrajit**
16:30	08_2026	120	08_2026 Study of the influence of variation in compositions for the production of lithium-containing ceramics	**ABYSHEV Bauyrzhan**
16:30	09_2235	120	09_2235 Acidochromic behavior of TFA-doped IDT-based conjugated polymers containing azo, imine and vinyl bonds	**KOTEWICZ Krzysztof**
16:30	10_2297	120	10_2297 Numerical and theoretical study of different structures of the cis-trans transition of substituted octadecanona-ene by dft and Mp2 (TD-MP2) methods	**DJEBAILI Abdelbaki**
16:30	11_2311	120	11_2311 Theoretical study of the static polarizability and second hyperpolarizability of substituted hexadecaocta-ene by AM1, PM3, PM6 and DFT	**BENOUMSAAD Kamel**
16:30	12_2350	120	12_2350 Resolving the sub-nanometre 3D spatial distribution of molecular dopants and correlating it to electrical properties in a polythiophene with polar side chains	**PERSSON Gustav**
16:30	13_2774	120	13_2774 Polymer-Cocrystal Blend Films for Field-Effect Transistors and Efficient Shortwave Infrared Photodetection	**CUI Jingyu**
16:30	14_3031	120	14_3031 Polymer-Carbon Nanotubes composites as thermoelectric materials	**KASONGO-NTUMBA Pauline**
16:30	15_305	120	15_305 PEDOT:PSS-coated silk-yran for transpiration-driven electrokinetic power generator	**BYUNGIL Hwang**
16:30	16_311	120	16_311 Exploring Conducting Polymer-based Memristors for Humidity and Temperature Sensing	**BISWAS Debajyoti**
16:30	17_376	120	17_376 Analyze the Effect of Two P-type Organic Semiconductor Heterojunctions on Transistor Charge Transport	**HAN Youngmin**
16:30	18_378	120	18_378 Identification of Stable Operation and Charge Transfer Characteristics of N-type Metal-Oxide and P-type Organic Anti-Ambipolar Transistor Using CYTOP Trap Free Layer	**HAN Youngmin**
16:30	19_444	120	19_444 Organic X-Ray Sensors: The Influence of PET Substrates and Material Structure on Radiation Performance	**POSAR Jessie**

16:30	**20_634**	**120**	20_634 Highly Sensitive Room Temperature Ammonia Gas Sensor based on Fluorenone/ Triphenylamine Derivatives	**CHEN Li-Yin**
16:30	**21_706**	**120**	21_706 Free electron solution from alkali metals at room temperature	**CHOI Chang Min**
16:30	**22_845**	**120**	22_845 Counter-Ion Size Effect on the Thermoelectric Properties of Doped Carbon Nanotubes Network	**DASH Aditya**

Tuesday May 28

T04_Doping in organic semiconductors Iia

BOSTON - 1ST FLOOR

Chairperson(s) : BERTARELLI Chiara

08:45	847	INV	Controlled Dedoping and Redoping of n-PBDF	**MEI Jianguo**
09:15	793		A highly conductive n-type conjugated polymer polymerized in water	**LI Qifan**
09:30	1017	INV	Multiscale manipulation toward high-performance n-doped polymeric semiconductors	**LEI Ting**

Tuesday May 28

T05_Doping in organic semiconductors Iib

BOSTON - 1ST FLOOR

Chairperson(s) : BERTARELLI Chiara

10:30	1622	INV	Bulk Doping of Conjugated Polymers and Interplay of their Electrical and Mechanical Properties	**MÜLLER Christian**
11:00	841		Spontaneous modulation doping in semi-crystalline conjugated polymers	**DASH Aditya**
11:15	842		Low-Voltage Energy-Harvesting DC-DC Converters for Low-Power Sensing Applications	**JOGLAR Matías**
11:30	1746	INV	Ground-state electron transfer in donor:acceptor polymer blends	**FABIANO Simone**

Tuesday May 28

T06_Doping in organic semiconductors Iic

BOSTON - 1ST FLOOR

Chairperson(s) : CAIRONI Mario

13:45	2271	INV	Understanding the interplay between thermal activation, diffusion, and phase segregation of molecular dopants blended with polymeric semiconductors.	**BEVERINA Luca**

14:15	919		Towards ultralow energetic disorders and high thermoelectric performance by controlling polymer backbone conformation	**LI Jia-Tong**
14:30	976		High electrical conductivity of NDI-based HOF structure	**IMAOKA Kentaro**
14:45	1009		Photochromic n-type dopants to extend linear dynamic range of organic photodetector: molecular design and dynamics in polymer matrix after electron trapping	**JANG Yun Hee**
15:00	1053		Doping of semiconducting/insulating polymer aerogels for thermoelectric applications	**ESSADIKI Souhail**
15:15	1084		Proton-Coupled Electron Transfer Doping of Semiconducting Single-Walled Carbon Nanotubes	**HAWKEY Angus**
15:30	2430	INV	Lattice thermal conductivity in amorphous and highly-ordered PEDOT	**RURALI Riccardo**

Tuesday May 28

T07_Doping in organic semiconductors lid

BOSTON - 1ST FLOOR

Chairperson(s) : RIERA-GALINDO Sergi

16:30	2966	INV	The use of Generative Artificial Intelligence tools in scientific publishing with Wiley	**TOMASELLO Gaia**
17:00	1273		Doped Semiconducting Polymers for Molecular Quantum Spintronics	**VAN SLAGEREN Joris**
17:15	1448		Electrically Programmed Doping Gradients Optimize the Thermoelectric Power Factor of a Conjugated Polymer	**CRAIGHERO Mariavittoria**
17:30	1464		Determination of the intrinsic cross-plane thermal conductivity of films using the Transient Plane Source (TPS) set up	**ZIJIN Zeng**
17:45	1486		Unlocking the full potential of the NDMBI dopant	**FERRARI Federico**

Wednesday May 29

T08_Doping in organic semiconductors IIIa

BOSTON - 1ST FLOOR

Chairperson(s) : KOSTER Jan anton

08:45	2575	INV	Electrochemical Doping of Mixed Conducting Polymer Films for Optoelectronics and Switchable Devices	**LUDWIGS Sabine**
09:15	1543		Flexible, Scalable, and Reliable Fully Screen-printed Organic Thermoelectric Generators	**BRUNETTI Irene**
09:30	1580		Novel polar single ether side chains for high-performing doped materials	**BARDAGOT Olivier**
09:45	1584		Dopant complexes: A highly stable and almost universal doping system for organic semiconductors	**CAMPOY-QUILES Mariano**

Wednesday May 29

T09_Doping in organic semiconductors IIIb

BOSTON - 1ST FLOOR

Chairperson(s) : KOSTER Jan anton

10:30	2694	INV	Theoretical models of doping: density of states, OFET threshold voltage and unconventional thermoelectric behavior	**ORTMANN Frank**
11:00	1603		An Efficient UV-VIS Spectroscopic Approach for Quantifying the Polaron Yield Efficiency in p-Doped Organic Nanoparticle Dispersions	**ARMLEDER Jonas**
11:15	1628		Origin of Asymmetric Electrochemical Doping and Switching Kinetics in Organic Electrochemical Transistors	**GINGER David**
11:30	2825	INV	Understanding host-dopant interactions to improve the performance of n-type conjugated polymers	**BARAN Derya**

Wednesday May 29

T10_Doping in organic semiconductors IIIc

BOSTON - 1ST FLOOR

Chairperson(s) : CAIRONI Mario

13:45	2564	INV	Vitrification as a tool for structure control of organic semiconductors	**STINGELIN Natalie**
14:15	2069		Doping-induced morphology changes and their impact on thermoelectricity in polymers	**FENWICK Oliver**
14:30	2326		Bimodal molecular weight distributions as a mean to control crystallinity and large-scale orientation on the novel n-type poly(benzodifurandione), PBDF	**ZAPATA-ARTEAGA Osnat**
14:45	2488		Synthetically Nimble Organic Semiconductors for Thermoelectrics Prepared via Direct Arylation Polymerization	**KIMPEL Joost**
15:00	132	INV	Doping in Organic Semiconductors: Novel Dopants, Mechanisms and Applications	**HU Yuanyuan**