



European Materials Research Society

Spring Meeting 2022

May 30 | June 3
Virtual Conference

SYMPOSIUM U

Advanced characterization of organic and hybrid materials

Symposium Organizers :

Emanuele ORGIU, Institut national de la recherche scientifique – University of Québec

Ingo SALZMANN, Concordia University

Natalie BANERJI, University of Bern

Steffen DUHM, Soochow University

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Monday may 30

08:45	Welcome and Introduction to the Symposium	
	Doping phenomena I : Natalie Banerji - Steffen Duhm	
09:00	INV CHARGE TRANSPORT AND THERMOELECTRIC PROPERTIES OF HIGH CONDUCTIVITY OF CONJUGATED POLYMERS Henning Sirringhaus Cavendish Laboratory, University of Cambridge	U 1.1
09:30	Electrochemical doping mechanisms in the ordered and disordered phases of P3HT Priscila Cavassin, Isabelle Holzer, Olivier Bardagot, Julien Réhault, Natalie Banerji University of Bern	U 1.2
09:45	Bipolarons role for high conductivities in electrochemically doped P3HT probed via in-situ THz spectroscopy Demetra Tsokkou, Priscila Cavassin and Natalie Banerji Department of Chemistry, Biochemistry and Pharmacy (DCBP), University of Bern, Freiestrasse 3, 3012 Bern, Switzerland.	U 1.3
10:00	Dopant-induced broadening of the density of states governs ion-pair formation in molecularly doped P3HT Hannes Hase, Michael Berteau-Rainville, Somaiyeh Charoughchi, Wolfgang Bodlos, Roland Resel, Emanuele Orgiu, Ingo Salzmänn Department of Physics, Concordia University, Montreal, Canada, Institut national de la recherche scientifique (INRS), Varennes, Canada, Department of Chemistry and Biochemistry, Concordia University, Montreal, Canada, Institute of Solid State Physics, TU Graz, Graz, Austria, and Materials Science and Engineering, Stanford University, Stanford, California 94305, USA, Institute of Solid State Physics, TU Graz, Graz, Austria, Institut national de la recherche scientifique (INRS), Varennes, Canada, Department of Physics, Department of Chemistry and Biochemistry, Centre for Research in Molecular Modeling (CERMM), and Centre for NanoScience Research (CeNSR), Concordia University, Montreal, Canada	U 1.4
10:15	Discussion	
10:30		
	Advanced Microscopies I : Roland Resel	
11:00	INV Advanced characterisation of conjugated polymers by high-resolution STM imaging Giovanni Costantini Department of Chemistry, University of Warwick	U 2.1
11:30	Direct assessment of charge transport ability of organic semiconductor by secondary electron spectrum Wen-Shan Zhang, Rasmus R. Schröder Centre for Advanced Materials, Universität Heidelberg & Bioquant, Universität Heidelberg, D-69120 Heidelberg, Germany	U 2.2
11:45	Hyperspectral mid-infrared single-pixel microscopy Alexander Ebner, Paul Gättinger, Ivan Zorin, Christian Rankl, Markus Brandstetter RECENDT ? Research Center for Non-Destructive Testing GmbH, Linz, 4040, Austria, RECENDT ? Research Center for Non-Destructive Testing GmbH, Linz, 4040, Austria, RECENDT ? Research Center for Non-Destructive Testing GmbH, Linz, 4040, Austria, RECENDT ? Research Center for Non-Destructive Testing GmbH, Linz, 4040, Austria, RECENDT ? Research Center for Non-Destructive Testing GmbH, Linz, 4040, Austria, RECENDT ? Research Center for Non-Destructive Testing GmbH, Linz, 4040, Austria	U 2.3
12:00	Discussion	
12:15	Lunch	
	Doping phenomena II : Ingo Salzmänn	
13:45	INV Towards a unified understanding of charge transfer, release and transport in doped organic semiconductors Gabriele D'Avino Grenoble Alpes University, CNRS, Grenoble INP, Institut Néel, 25 rue des Martyrs, 38042 Grenoble, France	U 3.1

14:15	Molecular Quadrupole Moments Promote Ground-State Charge Generation in Doped Organic Semiconductors Alberto Privitera(1), Giacomo Lodi(2), Moritz K. Riede(1), Gabriele d'Avino(3) and David Beljonne(2) (1) Clarendon Laboratory, Department of Physics, University of Oxford, Oxford, OX1 3PU UK (2) Laboratory for Chemistry of Novel Materials, University of Mons, Mons, B-7000 Belgium (3) Institut Néel, CNRS and Grenoble Alpes University, Grenoble, F-38042 France	U 3.2
14:30	Controlling the surface and interface properties of Pb-free perovskites/charge transport materials by lattice engineering Pingping JIANG (1), Boubacar TRAORE (2), Mikael KEPENEKIAN (2), George VOLONAKIS (2), Claudine KATAN (2), Laurent PEDESSEAU (1), and Jacky EVEN (1) (1) Univ Rennes, INSA Rennes, CNRS, Institut FOTON - UMR 6082, F-35000 Rennes, France (2) Univ Rennes, ENSCR, INSA Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes) - UMR 6226, F-35000 Rennes, France	U 3.3
14:45	Discussion	
15:00		
	4: Photophysics I : Emanuele Orgiu	
15:30	Hot phonon bottleneck effect in quasi-2D perovskites Ziyuan Ge(1), Ben P. Carwithen(1), Martin Kroll(2), Thomas R. Hopper(1), Karl Leo(2), Yana Vaynzof(2), Artem A. Bakulin(1*) (1) Department of Chemistry and Centre for Processable Electronics, Imperial College London, W12 0BZ, United Kingdom (2) Centre for Advancing Electronics Dresden, Technische Universität Dresden, 01069 Dresden, Germany	U 4.1
15:45	INV Tuning the coherent propagation of organic exciton-polaritons through dark state delocalization Andrew Musser Cornell University	U 4.2
16:15	Discussion	
16:30		
	: Ingo Salzmänn	
16:45	Dielectric Tensor of Micro-Textured Organic Thin Films obtained by Imaging Mueller Matrix Ellipsometry Manuela Schiek (1), S. Funke (2), M. Duwe (2), P.H. Thiesen (2), K. Hingerl (1), F. Balzer (3) (1) Johannes Kepler University of Linz, Austria, (2) Accurion GmbH Göttingen, Germany, (3) University of Southern Denmark, DK	U 5.1
16:45	Environmental stability of an amine-doped rigid polymer for printed electronics Yang, C.-Y.(1), Stoeckel, M.-A.*(1), Ruoko, T.-P.(1), Wu, H.-Y.(1), Liu, X.(1), Kolhe, N.B.(2), Wu, Z.(3), Puttisong, Y.(4), Musumeci, C.(1), Massetti, M.(1), Sun, H.(1), Xu, K.(1), Tu, D.(1), Chen, W.M.(4), Woo, H.Y.(3), Fahlman, M.(1), Jenekhe, S.A.(2), Berggren, M.(1), Fabiano, S.(1) (1) Laboratory of Organic Electronics, Department of Science and Technology, Linköping University, Norrköping, Sweden (2) Department of Chemical Engineering and Department of Chemistry, University of Washington, Seattle, WA, USA (3) Department of Chemistry, College of Science, Korea University, Seoul, 136-713, Republic of Korea (4) Department of Physics, Chemistry and Biology, Linköping University, Linköping, Sweden	U 5.2
16:45	Enhancing the stability of Cs-based perovskites by mixing the Sn-Pb cations Julia Mari-Guaita, Amal Bouich, Bernabé Mari Institut de Disseny i Fabricació, Universitat Politècnica, València, Spain	U 5.3

16:45	Determination of the Glass Transition Temperature from Confined Acoustic Phonon Modes in Nanometric PMMA Films D. Brick, M. Hofstetter, F. Noll, P. Stritt, J. Rinder, V. Gusev, T. Dekorsy, M. Hettich Department of Physics, University of Konstanz, 78464 Konstanz, Germany, Department of Physics, University of Konstanz, 78464 Konstanz, Germany, Research Center for Non-Destructive Testing GmbH, Altenbergerstr. 96, 4040 Linz, Austria, Department of Physics, University of Konstanz, 78464 Konstanz, Germany, Department of Physics, University of Konstanz, 78464 Konstanz, Germany, Laboratoire d'Acoustique de l'Université du Mans (LAUM), UMR 6613, Institut d'Acoustique - Graduate School (IA-GS), CNRS, Le Mans Université, Av. O. Messiaen, 72085 Le Mans, France, Institute of Technical Physics, German Aerospace Center, Pfaffenwaldring 38-40, 70569 Stuttgart, Germany, Research Center for Non-Destructive Testing GmbH, Altenbergerstr. 96, 4040 Linz, Austria,	U 5.4	16:45	The growth of Methylammonium lead iodide Perovskite Films: Studying the impact of Bromide Doping Khawla Fradi a,b,c , Amal Bouich a, bechir slimi b, Bernabé Mari a , Radhouane Chtourou b a Institut de Disseny i Fabricació, Universitat Politècnica, València, Spain b Laboratoire de Nanomatériaux et Systèmes pour les Energies Renouvelables, Centre de Recherches et des Technologies l'Energie, Technopole BorjCedria, Bp 95, Hammam Lif 2050, Tunisia c Faculté des Sciences de Tunis, Université d'El Manar, Tunis, Tunisia	U 5.14
16:45	Towards designing of high efficient NIR-emitting OLEDs based on coordination compounds of Nd³⁺ ion with fluorinated pyrazole-sub Ilya V. Taydakov, Mikhail T. Metlin, Dmitry O. Goryachii, Daria A. Metlina, Nikolay P. Datskevich, Roman I. Avetisov* 1 P.N. Lebedev Physical Institute of the Russian Academy of Sciences, 53 Leninsky Prospect, 119991 Moscow, Russian Federation 2Mendeleev University of Chemical Technology of Russia, 125047, Russia, Moscow, Miusskaya pl.9	U 5.6	16:45	Novel two-chromophores copolymers for single-layer white OLEDs: optical, photophysical and electrooptical characterization Despoina Tselekidou 1, Kyparisis Papadopoulos 1, Vasileios Kyriazopoulos 1,2, Konstantinos C. Andrikopoulos 3, Aikaterini K. Andreopoulou 3, Joannis K. Kallitsis 3, Argiris Laskarakis 1, Stergios Logothetidis 1, Maria Gioti 1 1 Nanotechnology Lab LTFN, Department of Physics, Aristotle University of Thessaloniki, GR-54124 Thessaloniki, Greece, 2 Organic Electronic Technologies P.C. (OET), Antoni Tritsi 21B, GR-57001 Thessaloniki, Greece, 3 Department of Chemistry, University of Patras, Caratheodory 1, University Campus, GR-26504 Patras, Greece,	U 5.15
16:45	Tunable synaptic behavior in lateral perovskite diodes S. M. Sattari-Esfahlan*(1), Xuewen Liu (2), Eun-Cheol Lee (2), Chang-Hyun Kim (1) (1) Department of Electronic Engineering, Gachon University, Seongnam, Republic of Korea (2) Department of Physics, Gachon University, Seongnam, Republic of Korea * lead presenter	U 5.7	16:45	A time-resolved spectro-electrochemistry study on IDTBT polymers Isabelle Holzer, Priscila Cavassin, Natalie Banerji Christian Nielsen	U 5.16
16:45	Fabrication of polymer thin-film source-gated transistors Hyuna Lee*, S. M. Sattari-Esfahlan, Chang-Hyun Kim * lead presenter Department of Electronic Engineering, Gachon University, Seongnam, Republic of Korea	U 5.8	16:45	Vacuum Electro spray Deposition of Poly(3-hexylthiophene) Films Shubham Bhagat, Ingo Salzmann Department of Physics, Concordia University, Montreal, Canada, Department of Physics, Department of Chemistry and Biochemistry, Concordia University, Montreal, Canada,	U 5.17
16:45	DUAL LABELLED CORE-SHELL POLYSTYRENE NANOPARTICLES WITH PLASMON-ENHANCE PROPERTIES AS A MODEL FOR MICROPLASTICS ASSESMENT Oscar H. Moriones, Neus G. Bastús, Muriel Freixanet Gusta, Laura Mondragon, Victor Puentes. Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, Campus UAB, Bellaterra, 08193 Barcelona, Spain, Universitat Autònoma de Barcelona (UAB), Campus UAB, 08193, Bellaterra, Barcelona, Spain, Vall d'Hebron Institut de Recerca (VHIR), 08035, Barcelona, Spain, Institució Catalana de Recerca i Estudis Avançats (ICREA), P. Lluís Companys 23, 08010 Barcelona, Spain.	U 5.9			
16:45	Probing the correlation between the morphology and the optical anisotropy of ZnTPP films Rossella Yivlialin, Claudia Filoni, Alberto Calloni, Lorenzo Ferraro, Francesco Goto, Isheta Majumdar, Marco Finazzi, Lamberto Duò, Franco Ciccacci and Gianlorenzo Bussetti Department of Physics, Politecnico di Milano, p.zza Leonardo da Vinci 32 - 20133 Milano (Italy)	U 5.10			
16:45	-COOH-functionalized magnetite nanoparticles synthesized through a microfluidic lab-on-chip device Cristina Chircov, Alexandru Mihai Grumezescu, Alexandra Catalina Birca, Anton Ficaï, Bogdan Stefan Vasile, Ecaterina Andronescu Department of Science and Engineering of Oxide Materials and Nanomaterials, Faculty of Applied Chemistry and Materials Science, University Politehnica of Bucharest	U 5.11			
16:45	Luminescent hybrid powders in the PbF₂-LaF₃ and PbF₂-YF₃ systems with (8-hydroxyquinolate) lithium synthesized by the co-precipi P.V. Strelakov1, M.N. Mayakova2, M.U. Andreeva1, K.I.Runina1, D.A. Butenkov1, O.B. Petrova1, I.R. Avetisov1, I.Ch. Avetisov1 1. Department of Chemistry and Technology of Crystals, D. Mendeleev University of Chemical Technology, MUCTR, Moscow, Russia 2. A.M.Prokhorov General Physics Institute RAS, GPI RAS, Moscow, Russia	U 5.12			
16:45	Towards designing of high efficient NIR-emitting OLEDs based on coordination compounds of Nd³⁺ ion with fluorinated pyrazole-sub Ilya V. Taydakov1, Mikhail T. Metlin1, Dmitry O. Goryachii1, Daria A. Metlina1, Nikolay P. Datskevich1, Roman I. Avetisov2 1 P.N. Lebedev Physical Institute of the Russian Academy of Sciences, 53 Leninsky Prospect, 119991 Moscow, Russian Federation 2 Mendeleev University of Chemical Technology of Russia, 125047, Russia, Moscow, Miusskaya pl.9	U 5.13			

Tuesday may 31

Photophysics II : Sophia Hayes

09:00 **INV Static disorder, dynamic disorder, wavefunction delocalisation –, using optical spectroscopy to assess their influence on charge transfer states in organic solar cell materials** U 6.1
 F.-J. Kahle, A. Rudnick, S. Wedler, R. Saxena, R. Ammenhuser, U. Scherf, S. Bagnich, H. Bassler, S. Athanasopoulos, A. Kohler
 Soft Matter Optoelectronics, Universitatsstr. 30, Universitat Bayreuth, 95448 Bayreuth, Soft Matter Optoelectronics, Universitatsstr. 30, Universitat Bayreuth, 95448 Bayreuth, Soft Matter Optoelectronics, Universitatsstr. 30, Universitat Bayreuth, 95448 Bayreuth, Macromolecular Chemistry Group (BUWMakro) and Wuppertal Institute for Smart Materials and Systems (CM@S), Bergische Universitat Wuppertal, Gauss-Str. 20, 42119 Wuppertal, Macromolecular Chemistry Group (BUWMakro) and Wuppertal Institute for Smart Materials and Systems (CM@S), Bergische Universitat Wuppertal, Gauss-Str. 20, 42119 Wuppertal, Soft Matter Optoelectronics, Universitatsstr. 30, Universitat Bayreuth, 95448 Bayreuth, Bayreuth Institute of Macromolecular Research (BIMF), Universitat Bayreuth, 95448 Bayreuth, Bayreuth Institute of Macromolecular Research (BIMF), Universitat Bayreuth, 95448 Bayreuth, Soft Matter Optoelectronics, Bayreuth Institute of Macromolecular Research (BIMF), Bavarian Polymer Institute (BPI), Universitat Bayreuth, 95448 Bayreuth

09:30 **Revealing the Thermally Induced Degradation of PM6:Y6 based Bulk Heterojunction Organic Solar Cell** U 6.2
 Shahidul Alam, Hua Tang, Maryam Alqurashi, Wejdan Althobaiti, Si Chen, Jafar I. Khan, Frederic Laquai*
 King Abdullah University of Science and Technology (KAUST), KAUST Solar Center (KSC), Physical Sciences and Engineering Division (PSE), Material Science and Engineering Program (MSE), Thuwal 23955-6900, Kingdom of Saudi Arabia

09:45 **Donor-acceptor polymer complex formation in solution behind highly efficient all-polymer solar cells** U 6.3
 Ishita Jalan (1), Cleber F.N. Marchiori (2), Zewdneh Genene (3), Andre Johansson (2), C. Moyses Araujo (2), Ergang Wang (3), Jan van Stam (1), Ellen Moons (2)
 1. Department of Engineering and Chemical Sciences, Karlstad University, SE-65188 Karlstad, Sweden. 2. Department of Engineering and Physics, Karlstad University, SE-65188 Karlstad, Sweden. 3. Department of Chemistry and Chemical Engineering, Chalmers University of Technology, SE-412 96 Goteborg, Sweden.

10:00 **Efficient Exploration of the Composition Space in Ternary Organic Solar Cells by Combining High-Throughput Material Libraries an** U 6.4
 Albert Harillo-Banos, Xabier Rodrıguez-Martınez, Mariano Campoy-Quiles
 Institute of Material Science of Barcelona (ICMAB-CSIC)

10:15 **Unravel the Thermal/Voltage Dependent Trapped Carrier Dynamics in Perovskite Solar Cells via Pump-Push-Photocurrent Spectroscopy** U 6.5
 Beier Hu, Jiaxin Pan, Ziming Chen, Thomas Macdonald, Artem A. Bakulin
 Imperial College London

10:30 **Discussion**

10:45

Spectroscopy I : Martin Brinkmann

11:00 **INV Impedance spectroscopy of halide perovskite solar cells captures the hysteresis effects** U 7.1
 Juan Bisquert
 Institute of Advanced Materials, Universitat Jaume I, Castello, Spain.

11:30 **X-ray Nanoanalysis on Perovskite Thin Film: fluorescence and XBIC mapping** U 7.2
 Matteo Verdi(1,2), Jaime Segura-Ruiz(3), Andrea Ciavatti(1,2), Laura Basirico(1,2), Annamaria Petrozza(4), Federico Boscherini(1) and Beatrice Fraboni(1,2)
 (1) Department of Physics and Astronomy, University of Bologna, Bologna, Italy. (2) National Institute for Nuclear Physics INFN, Bologna, Italy. (3) ID16B ? ESRF: The European Synchrotron, 71 avenue des Martyrs, 38043 Grenoble, France. (4) Center for Nano Science and Technology PoliMi, Istituto Italiano di Tecnologia, 20133 Milano, Italy.

11:45 **Tracing Trapped Carrier Dynamic in Perovskite Solar Cell Via IR Optical Activation Spectroscopy** U 7.3
 Jiaxin Pan, Ziming Chen, Tiankai Zhang, Feng Gao, Artem Bakulin
 Imperial College London

12:00 **Discussion**

12:15 **Lunch**

13:45 **Plenary 1 +**

Structure and Properties I : Ingo Salzmann

15:00 **Thin Film Structure of the Asymmetric Ph-BTBT-10 Molecule for Application in Organic Thin Film Transistors** U 8.1
 Sebastian Hofer, Andreas Hofer, Johanna Unterkofler, Wolfgang Bodlos, Adrian Tamayo, Tommaso Salzillo, Marta Mas-Torrent, Michael Ramsey, Jiri Novak, Alessandro Sanzone, Luca Beverina, Yves Henry Geerts, Roland Resel
 Institute of Solid State Physics, Graz University of Technology, Austria, Institut de Ciencia de Materials, Universitat Autonoma de Barcelona, Spain, Institute of Physics, Karl-Franzens University Graz, 8010 Graz, Austria, Department of Materials Science, University of Milano-Bicocca, Italy, Department of Condensed Matter Physics, Masaryk University, Brno, Czech Republic, Laboratoire de Chimie des Polymeres, Universite? Libre de Bruxelles, Belgium,

15:15 **Operando studies of morphological degradation in polymer-based organic solar cells** U 8.2
 Peter Muller-Buschbaum
 Lehrstuhl fu?r Funktionelle Materialien, Physik-Department, Technische Universita?t Munchen, James-Franck-Str. 1, 85748 Garching, Germany

15:30 **Thickness hindered crystallization and two-step nucleation followed by x-ray scattering and Vis spectroscopy** U 8.3
 J. Rozbo?il, K. Broch, R. Resel, O. Caha, F. Munz, P. Mikulık, J.E. Anthony, H. Sirringhaus, and J. Novak
 J. Rozbo?il, O. Caha, F. Munz, P. Mikulık, J. Novak - Department of Condensed Matter Physics, Masaryk University, Kotla?ska 2, 61137 Brno, Czech Republic, K. Broch - Institute for Applied Physics, Eberhard-Karls Universitat Tubingen, Auf der Morgenstelle 10, Germany, R. Resel - Institute of Solid State Physics, Graz University of Technology, Petersgasse 16, 8010 Graz, Austria, J.E. Anthony - Department of Chemistry, University of Kentucky, Lexington, Kentucky 40506, USA, H. Sirringhaus - Cavendish Laboratory, University of Cambridge, JJ Thomson Avenue, Cambridge CB3 0HE, UK

15:45 **Conjugated polymer-cellulose hybrid materials ? correlating nanostructure and electronic functionality** U 8.4
 Roth, S. V.?(1,2), Brett, C. J. (1,2), Mansson, M.(2), Frielinghaus, H.(3), Porcard, L.(4), Muller-Buschbaum, P.(5,6), Soderberg, L.D.(2)
 (1)Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany, (2)KTH Royal Institute of Technology-gy, Stockholm, Sweden, (3)Julich Centre for Neutron Science JCMS, Garching, Germany, (4)Institut Laue-Langevin ILL, Grenoble, France, (5) Lehrstuhl fur Funktionelle Materialien, Physik-Department, TU Munchen, Garching, Germany, (6)Heinz-Maier-Leibniz-Zentrum MLZ, TU Munchen, Garching, Germany

16:00 **Study of Polymorph Tuning at the Surfaces in an Organic Semiconductor** U 8.5
 Ann Maria James*?, Lara Gigli+, Nicola Demitri+, Yves H. Geerts?, Roland Resel?
 ? Institute of Solid State Physics, Graz University of Technology, Petersgasse 16, 8010 Graz,Austria ? De?partement de Physique, Faculte?des Sciences, Universite?Libre de Bruxelles CP223, Campus de la Plaine, 1050 Brussels, Belgium +Elettra-Sincrotrone Trieste, S.S. 14 Km 163.5 in Area Science Park, 34149 Basovizza-Trieste, Italy

16:15 **Discussion**

16:30

Structure and Properties II : Emanuele Orgiu

16:45 **INV AFM-IR reveals chemical composition in emerging PV materials** U 9.1
 Leticia Christopholi [1], Ishita Jalan [2], Zafer Hawash [1], Leif Ericsson[1], Jan van Stam[2], Ellen Moons [1]
 1. Department of Engineering and Physics, Karlstad University, SE-65188 Karlstad, Sweden. 2. Department of Engineering and Chemical Sciences, Karlstad University, SE-65188 Karlstad, Sweden.

17:15 **The Added Value of Circular Dichroism to Study Excitons in Photoactive Organic Semiconductor Thin Films** U 9.3
 M. F. Schumacher (1), T. G. Nguyen (1), J. Zablocki (1), A. Lützen (1), N. J. Hestand (2), F. Balzer (3), K. Hingerl (4), M. Schiek (4).
 (1) University of Bonn, Germany, (2) Evangel University, Springfield Missouri, USA, (3) University of Southern Denmark, Sonderborg, Denmark, (4) Johannes Kepler University Linz, Austria.

17:30 **INV Linking microstructure to transport in soft materials: the importance of lengthscales** U 9.4
 Alberto Salleo
 Stanford University, Dept. of Materials Science and Engineering

Wednesday June 1

Thermoelectrics : Giovanni Costantini

09:00 **INV Thermal conductivity measurement in thin organic and perovskite films** U 10.1
 Dr Oliver Fenwick
 School of Engineering and Materials Science, Queen Mary University of London, UK.

09:30 **Improving the thermoelectric performance of polymer semiconductors through mixing.** U 10.2
 Osnat Zapata-Arteaga.1, Sara Marina2, Guangzheng Zuo.3, Kai Xu.1, Bernhard Döring1, Luis Alberto Pérez1, Juan Sebastián Reparaz1, Jaime Martín2,4,5, Martijn Kemerink6,7, and Mariano Campoy-Quiles1,?
 1 Institute of Materials Science of Barcelona (ICMAB-CSIC). Campus UAB08193 Bellaterra, Spain, 2 POLYMAT and University of the Basque Country. Av Tolosa 72, 2018, Spain, 3 Institute for Physics and Astronomy, University of Potsdam. 14476 Potsdam-Golm, Germany, 4 Grupo de Polimeros, Centro de Investigaciones Tecnológicas (CIT). Universidade da Coruña, Esteiro, 15471 Ferrol, Spain, 5 Ikerbasque, Basque Foundation for Science. 48013 Bilbao, Spain, 6 Centre for Advanced Materials, Heidelberg University. Im Neuenheimer Feld 225, 69120 Heidelberg, Germany., 7 Division of Electronics and Photonic Materials, Department of Physics, Chemistry and Biology. Linköping University, Linköping, Sweden.

09:45 **In-situ investigation of thermoelectric thin films based on ionic liquid post-treated PEDOT:PSS** U 10.3
 Anna Lena Oechsle (1), Julian E. Heger (1), Nian Li (1), Shanshan Yin (1), Sigrid Bernstorff (2) & Peter Müller-Buschbaum (1,3)
 (1) Technische Universität München, Physik-Department, Lehrstuhl für Funktionelle Materialien, James-Frank-Str. 1, Garching, Germany (2) Elettra-Sincrotrone Trieste S.C.p.A., Strada Statale 14 km 163.5, AREA Science Park, Basovizza 34149, Italy (3) Heinz Maier-Leibnitz Zentrum (MLZ), Lichtenbergstr. 1, 85748 Garching, Germany

10:00 **Discussion U.9 & U.10**

10:15

Advanced Devices : Oliver Fenwick

11:00 **INV 2D layered perovskite micro-crystalline flexible films as direct X-ray radiation detectors** U 11.1
 Andrea Ciavatti(1,2), Ferdinand Lédée (1), Matteo Verdi (1,2), Laura Basiricò (1,2), and Beatrice Fraboni (1,2)
 1- Department of Physics and Astronomy, University of Bologna, Viale Berti Pichat 6/2, 40127 Bologna, Italy 2 - National Institute for Nuclear Physics ? INFN section of Bologna, Viale Berti-Pichat 6/2, Bologna 40127, Italy

11:30 **New composite based on SnO2 nanoparticles?P3HT:PC71BM co-polymer blend, as absorber in bulk heterojunction photovoltaic cells** U 11.2
 Alina Irina RADU (1,2), Vlad-Andrei ANTOHE (2,3), Sorina IFTIMIE (2), Iulia ANTOHE (1), Mihaela FILIPESCU (1), Adrian RADU (2), Diana COMAN (2), Maria Luiza STINGESCU (2), Elena-Isabela BANCU (1), Maria DINESCU (1), Stefan ANTOHE (2,4,*)
 (1) National Institute for Lasers, Plasma and Radiation Physics (INFLPR), Atomistilor Street 409, 077125 Magurele, Ilfov, Romania, (2) University of Bucharest, Faculty of Physics, R&D Center for Materials and Electronic & Optoelectronic Devices (MDEO), Atomistilor Street 405, 077125 Magurele, Ilfov, Romania, (3) Université catholique de Louvain (UCLouvain), Institute of Condensed Matter and Nanosciences (IMCN), Place Croix du Sud 1, B-1348 Louvain-la-Neuve, Belgium, (4) Academy of Romanian Scientists (AOSR), Splaiul Independentei 54, 050094 Bucharest, Romania, *Corresponding author: santohe@fizica.unibuc.ro (S. ANTOHE), Contact author: vlad.antohe@fizica.unibuc.ro (V. A. ANTOHE).

11:45 **Chemical doping of a porous n-type polymeric film prepared by a Langmuir-Schaefer approach** U 11.3
 Stoeckel, M.-A.*(1), Wu, H.-Y.(1), Lu, Y.(2), Yang, C.-Y.(1), Wu, Z.(3), Woo, H.Y.(3), Pei, J.(2), Berggren, M.(1), Fabiano, S.(1)
 (1) Laboratory of Organic Electronics, Department of Science and Technology, Linköping University, Norrköping, Sweden (2) Beijing National Laboratory for Molecular Sciences (BNLMS), Key Laboratory of Bioorganic Chemistry and Molecular Engineering of Ministry of Education, Key Laboratory of Polymer Chemistry and Physics of Ministry of Education, Center of Soft Matter Science and Engineering, College of Chemistry and Molecular Engineering, Peking University, Beijing, 100871 China (3) Department of Chemistry, College of Science, Korea University, Seoul, 136-713, Republic of Korea

12:00 Discussion

Photophysics III : Andrew Musser

15:00 **INV** **Disentangling the excited state dynamics of conjugated polyelectrolytes self-assembled with ss-DNA with a direct molecular probe** U 12.1
Eliana Nicolaidou, Anthony W. Parker, Mike Towrie, Sophia C. Hayes*
Dept. of Chemistry, Univ. of Cyprus, Central Laser Facility, Rutherford Appleton Laboratory

15:30 **Understanding Photocapacitive and Photofaradaic Processes at the Organic Semiconductor/Water Interface for Biophotomodulation** U 12.2
Luca Bondi, Beatrice Fraboni, Tobias Cramer
University of Bologna, University of Bologna, University of Bologna

15:45 **Multilayer thickness evaluation of semiconductor and display structures by picosecond ultrasonics** U 12.3
Frederic FAESE, Julien MICHELON, Xavier TRIDON
Neta, Neta, Neta

16:00 **A new bulky molecular p-dopant for organic semiconductors** U 12.4
Somaiyeh Charoughchi, Hannes Hase, Jiang Tian Liu, Mohammad Askari, Venelin Petkov, Pat Forgione, Ingo Salzmann
Department of Chemistry and Biochemistry, Concordia University, Montreal, Canada, Department of Physics, Concordia University, Montreal, Canada, Department of Chemistry and Biochemistry, Concordia University, Montreal, Canada, Department of Chemistry, University of Toronto, Toronto, Canada, Department of Chemistry and Biochemistry, Concordia University, Montreal, Canada, Department of Chemistry and Biochemistry, Concordia University, Montreal, Canada, Department of Chemistry and Biochemistry, Concordia University, Montreal, Canada, Department of Physics, Department of Chemistry and Biochemistry, Concordia University, Montreal, Canada,

16:15 Discussion

Thursday June 2

Spectroscopy II : Steffen Duhm

09:00 **INV** **Full description of the electronic structure of organic single crystal: rubrene** U 13.1
Satoshi Kera
Institute for Molecular Science, Myodaiji, Okazaki 4448585, Japan

09:30 **Operando XPS Investigation of Chemical State and Electronic Structure of MoTe2 Field-effect-transistor Depending on Channel Charge** U 13.2
Seungwook Choi, Guen Hyung Oh, Songwoung Hong, TaeWan Kim, Ansoon Kim
Operando Methodology and Measurement Team, Interdisciplinary Materials Measurement Institute, Korea Research Institute of Standards and Science (KRISS), Daejeon 34113, South Korea, Department of Nano Science, University of Science and Technology (UST), Daejeon 34113, South Korea, Department of Electrical Engineering and Smart Grid Research Center, Jeonbuk National University, Jeonju, 54896, South Korea

09:45 **Trap States Ruling Photoconductive Gain in Tissue-Equivalent, printed Organic X-Ray Detectors** U 13.3
Ilaria Fratelli (1,2), Laura Basiricò (1,2), Andrea Ciavatti (1,2), John Anthony (3), Ioannis Kymissis (4) and Beatrice Fraboni (1,2)
1) Department of Physics and Astronomy, University of Bologna, Bologna, Italy 2) National Institute of Nuclear Physics (INFN), Section of Bologna, Bologna, Italy 3) University of Kentucky, Center for Applied Energy Research, United States 4) Department of Electrical Engineering, Columbia University, New York, New York 10027, United States

10:00 **Material Authoring and Relationship Analysis System for High-Performance Properties Material Discovery.** U 13.4
Imran, Do-Hyeun Kim, Bong Seon Jong, Su-Young Chi, and Choi Yo Han
Department of Computer Engineering, Jeju National University, Jeju 63243, Korea, Korea University of Science and Technology, 217, Gajeong-ro, Yuseong-gu, Daejeon, Korea, Electronics and Telecommunications Research Institute, Daejeon, 305-370, Korea,

10:15 Discussion

10:30

Advanced Microscopies 2 : Steffen Duhm

11:00 **INV** **Investigating dopant intercalation into polymer semiconductors by TEM, Rutherford Backscattering and polarized spectroscopy** U 14.1
Yuhan Zhong (1,2), Shubhradip Guchait (1), Viktoriia Untilova (1), Laurent Herrmann (1), Dominique Müller (2), Céline Kiefer (3), Thomas Heiser (2), Martin Brinkmann (1)
(1) Université de Strasbourg, CNRS, ICS UPR 22, F-67000 Strasbourg, France (2) Université de Strasbourg, CNRS, ICUBE UMR 7357, F-67000, Strasbourg, France (3) Université de Strasbourg, CNRS, IPCMS UMR 7504, F-67087 Strasbourg, France

11:30 **Advanced scanning probe microscopy to probe early-stage degradation mechanisms in tri-cation organic-inorganic halide perovskite** U 14.2
Filipe Richheimer1,2, David Toth3,4, Bekele Hailegnaw5,6, Mark A. Baker2, Robert A. Dorey2, Ferry Kienberger3, Fernando A. Castro1, Martin Kaltenbrunner6, Markus C. Scharber5, Georg Gramse3,4, Sebastian Wood1
1National Physical Laboratory, Teddington, Middlesex, TW11 0LW, UK, 2Centre for Engineering Materials, University of Surrey, Guildford, GU2 7XH, UK, 3Keysight Technologies GmbH, Linz, 4020, Austria, 4Applied Experimental Biophysics, Johannes Kepler University, Linz, 4020, Austria, 5Linz Institute for Organic Solar Cells, Johannes Kepler University, Linz, 4040, Austria, 6Department Soft Matter Physics, Johannes Kepler University Linz, 4040, Austria

11:45 **Advanced microscopy methods for structural characterization of soft materials** U 14.3
Nadezda Prochukhan, Michael A. Morris.
Nadezda Prochukhan - School of Chemistry, CRANN and AMBER Research Centres, Trinity College Dublin, College Green, Dublin 2, Ireland, BiOrbic?Bioeconomy SFI Research Centre, University College Dublin, Belfield, Dublin 4, Ireland, Michael A. Morris - School of Chemistry, CRANN and AMBER Research Centres, Trinity College Dublin, College Green, Dublin 2, Ireland, BiOrbic?Bioeconomy SFI Research Centre, University College Dublin, Belfield, Dublin 4, Ireland.

12:00 Discussion and Closing Remarks