Emerging Light Emitting Materials 2024 (EMLEM24)

La Canea, Greece, 2024 October 16th - 18th
Conference organizers: Grigorios Itskos, Sohee Jeong and Jacky Even

Conference Program

October 16th - Day 1 (Wednesday) 1	
09:00 - 10:00	**Registration**
09:50 - 10:00	**Opening**
	Session 1A Chair: Maryna Bodnarchuk
10:00 - 10:30 1A-I1	Maksym Kovalenko *(ETH Zürich, Department of Chemistry and Applied Biosciences, Switzerland)* The first decade of perovskite quantum dots (in our lab)
10:30 - 10:45 1A-O1	Avijit Saha *(Physical Chemistry, Technische Universität Dresden (TU Dresden), 01069 Dresden, Germany)* RoHS Compliant, Efficient Short Wave Infrared (SWIR) Quantum Dot Emitters
10:45 - 11:00 1A-O2	Harshita Bhatia *(Department of Chemistry, KU Leuven, BE)*, Nadine J. Schrenker, Sara Bals, Maarten B.J. Roeffaers, Johan Hofkens, Elke Debroye Deciphering the Role of Water in Promoting the Optoelectronic Performance of Surface-Engineered Lead Halide Perovskite Nanocrystals
11:00 - 11:30	**Coffee Break**
	Session 1B Chair: Sotirios Christodoulou
11:30 - 12:00 1B-I1	Liberato Manna *(ISTITUTO ITALIANO DI TECNOLOGIA)* Halide Perovskite Nanocrystals: Synthesis, Growth Mechanisms, Superstructures
12:00 - 12:15 1B-O1	Zhaojun Li *(Department of Materials Science and Engineering, Solid State Physics, Uppsala University, Box 35, 75103 Uppsala, Sweden)* Defect Passivation in 2D Semiconducting Material for Sustainable Optoelectronic Applications
12:15 - 12:30 1B-O2	Andriy Stelmakh *(Laboratory of Inorganic Chemistry, Department of Chemistry and Applied Biosciences, ETH Zürich, Vladimir Prelog Weg 1, CH-8093 Zürich, Switzerland)*, Ihor Cherniukh, Kseniia Shcherbak, Andrij Baumketner, Maksym Kovalenko Faceting and Equilibrium Shapes of CsPbBr3 Nanocrystals
12:30 - 13:00 1B-I2	Jaehoon Lim *(Department of Energy Science, Sungkyunkwan University, Suwon, South Korea)* Revisiting Reaction Chemistry and Defect Formation in Core/Shell Heterostructured Quantum Dots
13:00 - 13:15 1B-O3	Saar Shaek *(Technion - Israel Institute of Technology, Materials Science and Engineering Faculty)*, Offir Zachs, Emma Massasa, Rachel Lifer, Lotte Kortstee, George Dosovitskiy, Boaz Pokroy, Ivano Castelli, Yehonadav Bekenstein Stability of Emissive Cubic Phase of Double Perovskite Nanocrystals with Li Compositions
13:15 - 13:30 1B-O4	Deepa Thakur *(Department of Materials Science and Engineering, Solid State Physics, Uppsala University, Box 35, 75103 Uppsala, Sweden)*, Zhaojun Li Defect Engineering in Light-Active 2D Transition Metal Dichalcogenides
13:30 - 15:00	**Lunch Break**
	Session 1C Chair: Sohee Jeong
15:00 - 15:30 1C-I1	Maryna Bodnarchuk *(Laboratory for Thin Films and Photovoltaics, Empa – Swiss Federal Laboratories for Materials Sci-ence and Technology, CH-8600 Dübendorf, Switzerland)* Advancements in the Synthesis and Multicomponent Superlattices of Highly Luminescent Lead Halide Perovskite Nanocrystals
15:30 - 15:45 1C-O1	Sotirios Christodoulou *(Inorganic Nanocrystals Laboratory, Department of Chemistry, University of Cyprus, Nicosia 1678, Cyprus)*, Marios Stylianou, Eric Bowes, Luca Leoncino, Rossaria Brescia, Andreas Othonos, Jennifer Hollingsworth Synthesis and Optical Characterization of PbS/CdS Colloidal Quantum Dots emitting at telecommunication wavelength
15:45 - 16:15 1C-I2	Marco Califano *(University of Leeds)* “There’s No Place Like... the Surface”: The (Nearly) Endless Design Opportunities Afforded by Nanocrystal Surface Engineering

October 17th - Day 2 (Thursday) 2	
	Session 2A Chair: Marco Califano
10:00 - 10:30 2A-I1	Jooyoung Sung *(Department of Physics and Chemistry, DGIST)* Ultrafast Charge Carrier Dynamics in Quantum Dot Solids Revealed by fs-Microscopy
10:30 - 10:45 2A-O1	Tomas Edvinsson *(Department of Materials Science and Engineering, Solid State Physics, Uppsala University, Box 35, 75103 Uppsala, Sweden)* Electronic and Vibrational Quantum Confinement Effects in ZnO Quantum Dots and 2D Perovskites
10:45 - 11:00 2A-O2	Marios Zacharias *(Univ Rennes, INSA Rennes, CNRS, Institut FOTON – UMR 6082, F-35000 Rennes, France)*, George Volonakis, Mikaël Kepenekian, Claudine Katan, Jacky Even Polymorphism in Halide Perovskites: Bridging the Gap Between Theory and Experiment
11:00 - 11:30	**Coffee Break**
	Session 2B Chair: Claudine Katan
11:30 - 12:00 2B-I1	Jennifer Hollingsworth *(Materials Physics and Applications Division: Center for Integrated Nanotechnologies, Los Alamos National Laboratory, Los Alamos 87545, New Mexico, United States)* Solution-Processed Quantum Light Sources Based on Ultra-Stable Giant Quantum Dots
12:00 - 12:15 2B-O1	Panagiotis Rodosthenous *(Experimental Condensed Matter Physics Laboratory, Department of Physics, University of Cyprus, Nicosia 1678, Cyprus)*, Grigorios Itskos, Sotirios Christodoulou, Marco Califano Modelling of Surface Defects in InAs Colloidal Quantum Dots
12:15 - 12:30 2B-O2	Janardan Kundu *(Indian Institute of Science Education and Research Tirupati)* Rational Control on Luminescence and Melting Temperatures of Low Dimensional Metal Halide Hybrids through Structure-Property Correlation
12:30 - 13:00 2B-I2	Dong Hee Son *(Department of Chemistry, Texas A&M University, College Station, Texas 77840, United States)* Generation of hot electrons and superradiance from strongly quantum-confined provskite quantum dots and their superlattices
13:00 - 13:30 2B-I3	George Volonakis *(Univ Rennes, ENSCR, INSA Rennes, CNRS, ISCR - UMR 6226, F-35000 Rennes, France.)* Ab-Initio Computational Design of Halide Perovskites and Related Materials
13:30 - 15:00	**Lunch Break**
	Session 2C Chair: George Volonakis
15:00 - 15:30 2C-I1	Thilo Stöferle *(IBM Research Europe — Zurich, CH-8803 Rüschlikon, Switzerland)* Room-Temperature Cavity Exciton-Polariton Condensation in Perovskite Quantum Dots
15:30 - 15:45 2C-O1	Oleksandr Kolomiiets *(Laboratory of Inorganic Chemistry, Department of Chemistry and Applied Biosciences, ETH Zürich, CH-8093 Zürich, Switzerland)*, Andriy Stelmakh, Sebastian Sabisch, Amrutha Rajan, Lidiia Dubenska, Andrij Baumketner, Gabriele Raino, Maryna Bodnarchuk, Maksym Kovalenko An Experimental and Computational Assessment of Long-chain Sulfonium Capping Ligands for Perovskite Quantum Dots
15:45 - 16:00 2C-O2	Rafael Araujo *(Department of Materials Science and Engineering, Solid State Physics, Uppsala University, Box 35, 75103 Uppsala, Sweden)*, Mustafa Aboulsaad, Tomas Edvinsson Implications of quantum confinement effects for the electronic and vibrational properties in 2D lead halide materials
16:00 - 16:30 2C-I2	Emmanuelle Deleporte *(Laboratoire Lumière, Matière et Interfaces, Université Paris-Saclay, ENS Paris-Saclay, CNRS, CentraleSupelec, 91405 Orsay Cedex, France)* Hybrid Halide Perovskite Thin Films for Large Surface and Room Temperature Polaritonic Applications
16:30 - 17:00 2C-I3	Nikos Pelekanos *(Department of Materials Science & Technology, University of Crete, 70013 Heraklion, Greece)*, Christina Siaitanidou, Violeta Spanou, Nikos Chatzarakis, Katerina Tsagaraki, Costas Stoumpos Dual-wavelength lasing due to a second phase in MAPbCl3
17:15 - 18:30	**Poster session**
20:30 - 22:00	**Social Dinner**

October 18th - Day 3 (Friday) 3	
	Session 3A Chair: Jacky Even
10:00 - 10:30 3A-I1	Aditya Mohite *(Department of Chemical and Biomolecular Engineering, Rice University, Houston, TX 77005)* The Rise of 2D Halide Perovskites for Durable and Efficient Optoelectronic Devices
10:30 - 10:45 3A-O1	Colin Jeanguenat *(Ecole Polytechnique Fédérale de Lausanne (EPFL))*, Kevin Sivula Four-fold enhanced energy transfer in perovskite nanostructured scintillators by chemical bonding.
10:45 - 11:00 3A-O2	Yuliia Kominko *(Department of Chemistry and Applied Biosciences, ETH Zürich, Zürich, Switzerland)*, Sebastian Sabisch, Andrii Kanak, Gabriele Raino, Simon C. Böhme, Gebhard J. Matt, Lidiia Dubenska, Ihor Cherniuk, Frank Krumeich, Matthias Klimpel, Xuqi Liu, Sergey Tsarev, Sergii Yakunin, Maksym V. Kovalenko Stable Room-Temperature Amplified Spontaneous Emission from Single-Source Thermally Evaporated Cesium Lead Halide Perovskites
11:00 - 11:30	**Coffee Break**
	Session 3B Chair: Aditya Mohite
11:30 - 12:00 3B-I1	Francesco Di Stasio *(Photonic Nanomaterials, Istituto Italiano di Tecnologia, 16163, Genova, Italy)* Colloidal quantum dots for near-infrared optoelectronics
12:00 - 12:15 3B-O1	Alaa Almushaikeh *(King Abdullah University of Science and Technology (KAUST), Advanced Membranes and Porous Materials Center, Division of Physical Science and Engineering, Thuwal, 23955, Saudi Arabia)*, Omar F. Mohammed Manganese Hybrid Halides for High-resolution X-ray Imaging Screen
12:15 - 12:30 3B-O2	Mustafa M. Aboulsaad *(Department of Materials Science and Engineering, Solid State Physics, Uppsala University, Box 35, 75103 Uppsala, Sweden)*, Rafael B. Araujo, Tomas Edvinsson Absorption, excitonic emission, and vibrational modes in quantum-confined lead halide 2D nanoplatelets
12:30 - 13:00 3B-I2	Solenn BERSON *(Univ. Grenoble Alpes, CEA, LITEN, INES)*, Matthieu MANCEAU, Olivier Dupre, Polyxeni Tsoulka, Noella Lemaitre, Perrine Carroy, Adrien Danel, Malek Benmansour Metal Halide Perovskite : a new class of material for the development of highly efficient PK/Si tandem solar cell technology
13:00 - 13:15 3B-O3	Taehee Kim *(ETH Zurich, Laboratory of Inorganic Chemistry, Department of Chemistry & Applied Biosciences)*, Mariia Svyrydenko, Ryeong Myeong Kim, Jeong Hyeon Han, Maryna Bodnarchuk, Ki Tae Nam, Gabriele Raino, Maksym Kovalenko Chiral Single Photon Emission in Perovskite Nanocrystals
13:15 - 13:30 3B-O4	Aliki Souzou *(Experimental Condensed Matter Physics Laboratory, Department of Physics, University of Cyprus, Nicosia 1678, Cyprus)*, Grigorios Itskos, Modestos Athanasiou, Andreas Manoli, Marios Constantinou, Maryna I. Bodnarchuk, Maksym V. Kovalenko, Chrysafis Andreou Interactions of Light, Surface Plasmons and Excitons in Bilayers of FAPbI3 Nanocrystals with Core-Shell Au/SiO2 Nanoparticles
13:30 - 15:00	**Lunch Break**
	Session 3C Chair: Grigorios Itskos
15:00 - 15:30 3C-I1	Alexandra Ramadan *(Department of Physics and Astronomy, University of Sheffield, Sheffield, S3 7RH, United Kingdom)* Understanding quasi-2D perovskite structures and their performance in LEDs
15:30 - 15:45 3C-O1	Alexandr Marunchenko *(Chemical Physics and NanoLund, Lund University, P.O. Box 124, 22100 Lund, Sweden)*, Jitendra Kumar, Shraddha M. Rao, Alexander Kiligaridis, Dmitry Tatarinov, Anatoly Pushkarev, Yana Vaynzof, Ivan Scheblykin Metal Halide Perovskite Memlumors
15:45 - 16:15 3C-I2	Shai Levy *(Department of Materials Science and Engineering, Solid-State Institute, and Helen Diller Quantum Center, Technion – Israel Institute of Technology, 3200003 Haifa, Israel)*, Yehonadav Bekenstein Collective Interactions of Excitons in Halide Perovskite Nanocrystal Superlattices
16:15 - 16:25	**Closing**

Poster Contribution

017	Sunghu Kim *(Department of Energy Science, Sungkyunkwan University, Suwon, South Korea)*, Wookjin Chung, Jooyoung Sung, Sohee Jeong Visualization of Carrier Diffusion in InP Quantum Dot Solids via Surface Passivation
030	Andreas Manoli *(Department of Physics, Experimental Condensed Matter Physics Laboratory, University of Cyprus)*, Theodosia Giamouki, Modestos Athanasiou, Maryna Bodnarchuk, Maksym Kovalenko, Grigorios Itskos Micro-Patterning of Perovskite Nanocrystal Films Using Laser Writer Lithography
033	Eleftheria Charalambous *(Experimental Condensed Matter Physics Laboratory, Department of Physics, University of Cyprus, Nicosia 1678, Cyprus)*, Andreas Manoli, Sunghu Kim, Bora Kim, Seongmin Park, Sohee Joeng, Grigorios Itskos Spectroscopic Studies of n-type and p-type Indium Arsenide Quantum Dot Films
046	Jakob Thyr *(Department of Materials Science and Engineering, Solid State Physics, Uppsala University, Box 35, 75103 Uppsala, Sweden)*, Tomas Edvinsson Photoluminescence and size dependent electron-phonon coupling effects in ZnO quantum dots
047	Hossein Roshan *(Photonic Nanomaterials, Istituto Italiano di Tecnologia, 16163, Genova, Italy)*, Anatol Prudnikau, Jinfei Dai, Matilde Cirignano, Francesco De Boni, Mirko Prato, Fabian Paulus, Vladimir Lesnyak, Francesco Di Stasio Short-wave infrared optoelectronics with colloidal CdHgSe/ZnCdS core/shell nanoplatelets
050	Davide Piccinotti *(Photonic Nanomaterials, Istituto Italiano di Tecnologia, 16163, Genova, Italy)*, Matteo Barelli, Hossein Roshan, Sergio Fiorito, Francesco Di Stasio Nanopixel-Emitting Arrays based on Colloidal Semiconductor Nanocrystals for Future Display Technologies
051	Sungwook Park *(UniQDot)*, Jongnam Park Surface Modification of Low-Dimensional Perovskite Films via Incorporation of Ionic Nanostructures: Tuning Optoelectronic Properties through Interfacial Reactions
052	Nefeli Polykarpou *(Inorganic Nanocrystals Laboratory, Department of Chemistry, University of Cyprus, Nicosia 1678, Cyprus)*, Eleftheria Charalambous, Manuela De Franco, Rossaria Brescia, Dong Zhu, Luca De Trizio, Andreas Othonos, Francesco Di Stasio, Grigorios Itskos, Sotirios Christodoulou Seeded-Growth Synthesis of InAs/ZnSexSx-1 Colloidal Quantum Dots
053	Emmanouil Lioudakis *(Laboratory of Ultrafast Science, Department of Physics, University of Cyprus, Nicosia 1678, Cyrpus)*, Kyriacos Georgiou, Chrysoula Patsalidou, Andreas Manoli, Andreas Othonos Coherent femtosecond high-order photonic device as a hardware solver of combinatorial optimization problems
054	Offir Zachs *(Department of Materials Science and Engineering, Solid-State Institute, and Helen Diller Quantum Center, Technion – Israel Institute of Technology, 3200003 Haifa, Israel)*, Yehonadav Bekenstein, Ivano Eligio Castelli Tunability of self-trapped exciton in lead-free double perovskite through Na-K Alloying
055	Konstantinos Brintakis *(Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas, Heraklion, Greece)*, Athanasia Kostopoulou, Emmanuel Stratakis Ultrafast Laser Processing of Metal Halide Perovskite Nanocrystals: A Versatile Tool for Morphology Control and 2D Material Conjugation
056	Athanasia Kostopoulou *(Institute of Electronic Structure and Laser, Foundation for Research and Technology-Hellas, Heraklion, Greece)*, Konstantinos Brintakis, Aikaterini Argyrou, Konstantina Alexaki, Maria Syskaki, Y Lan Pham, Jonathan Beauchamp, Emmanuel Stratakis Metal Halide Perovskites: Compositional and Morphological Engineering for Enhanced Gas Sensing Applications