PROGRAM

MATSUS & STECH

Materials for Sustainable Development Conference

Sustainable Technology Forum València

València, Spain · March 6th - 10th, 2023

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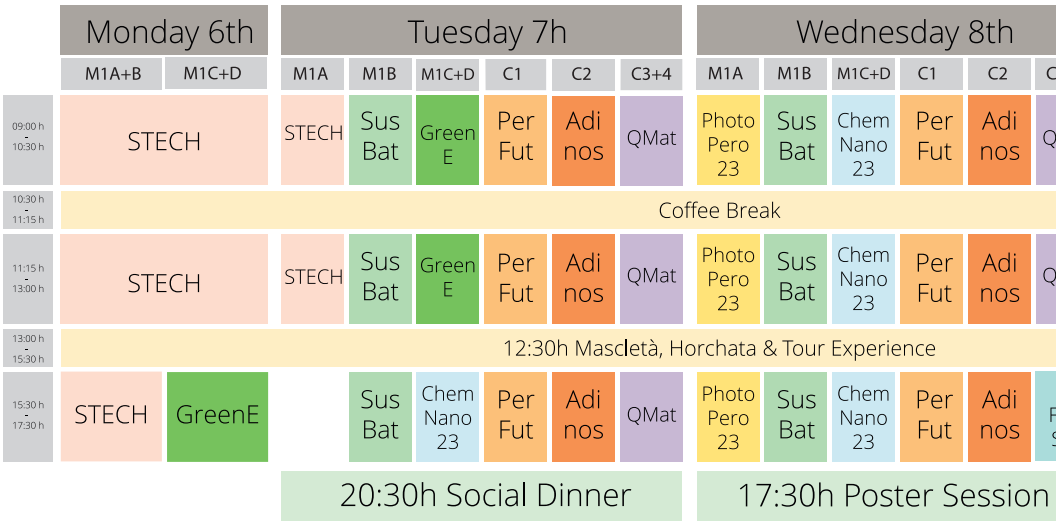

- **STECH**: Sustainable Technology Forum
- **SusBat**: Enabling Beyond Classical Li-ion Batteries through Materials Development and Sustainability
- **GreenE**: Advances in Green Energy Carriers
- **ChemNano23**: Chemistry of Nanomaterials
- **PerFut**: Metal Halide Perovskites Fundamental Approaches and Technological Challenges
- **Adinos**: Advances in Inorganic thin Film Semiconductors for Solar Energy Conversion: From Photovoltaicto Solar Fuels
- **QMat**: Materials for Quantum Technology
- **PhotoPero23**: Photophysics of Halide Perovskites and Related Materials – from bulk to Nano
- **2DPERO**: 2D Perovskites: Synthesis, Properties, and Applications
- **DeModeP23**: Characterisationand Modeling of Devices
- **2DSUSY**: 2D Nanomaterials for Sustainable Energy
- **NewOPV**: Concepts for Stable Non-fullerene Based Organic Solar Cells and their Applications
- **NCFun23**: Fundamental Processes in Nanocrystals and 2D Materials
- **e-FuelSyn**: Electrocatalysis for the Production of Fuels and Chemicals

		Thursday 9th						Friday 10th					
	C3+4	M1A	M1B	M1C+D	C1	C2	C3+4	M1A	M1B	M1C+D	C1	C2	C3+4
i s	QMat	Photo Pero 23	2D Pero	2D SUSY	New OPV	NC Fun 23	e-Fuel Syn	De Mode P23	2D Pero	2D SUSY	New OPV	e-Fuel Syn	NC Fun 23
Coffee Break													
i s	QMat	Photo Pero 23	2D Pero	2D SUSY	New OPV	NC Fun 23	e-Fuel Syn	De Mode P23	2D Pero		New OPV	e-Fuel Syn	NC Fun 23
12:30h Mascletà, Horchata & Tour Experience													
i s	e-Fuel Syn	Photo Pero 23	De Mode P23	2D SUSY	New OPV	NC Fun 23	e-Fuel Syn	De Mode P23			New OPV		NC Fun 23
ion								17:30h Closing & Awards Ceremony					

Schedule
STECH
SusBat
GreenE
ChemNano23
PerFut
Adinos
QMat
PhotoPero23
2DPERO
DeModeP23
2DDSUSY
NewOPV
NCFun23
e-FuelSyn

#STECH – Sustainable Technology Forum

Monday 6th - Session 1.1

Chair: **Emilio Palomares**

08:50 - 09:00h	**Symposium Opening**
09:00 - 09:20h S1.1-I1	**Ungyu Paik** Green manufacturing process towards higher energy density Li-ion batteries
09:20 - 09:40h S1.1-I2	**Ruben Folgado** Hydrogen in the Industry
09:40 - 10:00h S1.1-I3	**Olivia Estrella** Innovation as a lever for the transformation of the regional production model
10:00 - 10:30h	*Round table. Moderator:* **Emilio Palomares**
10:30 - 11:15h	**Coffee Break**

Monday 6th - Session 1.2

Chair: **Emilio Palomares**

11:15 - 11:35h S1.2-I1	**Ignasi Cañagueral** How do we get to Carbon Neutral Packaging?
11:35 - 11:55h S1.2-I2	**Ricardo Olalla** Technology for decarbonizing road transport
11:55 - 12:15h S1.2-I3	**Daniel Campo** Sustainability and circularity at BASF
12:15 - 12:45 h	*Round table. Moderator:* **Emilio Palomares**

Monday 6th - Session 1.3

15:30 - 15:45h S1.3-O1	**Francisca Quereda** Recycling and circularity in the ceramic sector: case studies

15:45 - 16:00h S1.3-O2	**Rocío Monsonís** Second-generation succinic acid production process using biogas-based CO2 and confectionery wastes
16:00 - 16:15h S1.3-O3	**Adrián Morales Serrano** Complementary recycling, is it possible to reach all the different waste?
16:15 - 16:30h S1.3-O5	**Enrique Moliner** Flexible, safe and efficient recycling of Li-ion batteries for a competitive, circular, and sustainable European battery manufacturing industry
16:30 - 17:00h	**Q&A Session**

Tuesday 7th - Session 2.1

09:00 - 09:15h S2.1-O1	**Norma Minar** Metal Foams for Next Level Electrolysis
09:15 - 09:30h S2.1-O2	**Mario Araya** Waste to Hydrogen and Chemicals
09:30 - 09:45h S2.1-O3	**Ana Mezquita** Decarbonising the ceramic industry with hydrogen
09:45 - 10:00h S2.1-O4	**Laura Cano** Research based on the generation of hydrogen by means of gasification techniques from mixtures of fractions rejection of waste that ends up in landfill
10:00 - 10:30h	**Q&A Session**
10:30 - 11:15h	**Coffee Break**

Tuesday 7th - Session 2.2

11:15 - 11:30h S2.2-O1	**Luca Sorbello** Versatility of Perovskite-based PV from indoor and outdoor applications
11:30 - 11:45h S2.2-O2	**Edgar Contreras** LCA based eco design approach to support carbon neutral production of ethylene
11:45 - 12:00h S2.2-O3	**María Fernanda Gazulla** Synthesis of ceramic pigments from cathodes of spent lithium-ion batteries
12:00 - 12:15h S2.2-O4	**Adolfo Benedito Borrás** New challenges in CO2 capture and use: from hybrid to ICCU (Integrated Carbon Capture and Utilization) solutions
12:15 - 12:30h S2.2-O5	**Juan Luis Pozo** Sequestration and Use of CO2 from a Cradle-to-Cradle Technology Perspective
12:30 - 13:00h	**Q&A Session**

#e-FuelSyn - Electrocatalysis for the Production of Fuels and Chemicals

Wednesday 8th - Session 1.1

Chair: **Julio Lloret Fillol**

15:20 - 15:30h	**Symposium Opening**
15:30 - 16:00h S1.1-I1	**Vincent Artero** Proton relays in molecular electrocatalysis: how do they allow for reversible behavior?
16:00 - 16:30h S1.1-I2	**Inke Siewert** Electroreduction of C=O Bonds in CO2, Ketones, and Aldehydes
16:30 - 17:00h S1.1-I3	**Dennis Hetterscheid** The electrochemical synthesis of hydrogen peroxide with molecular copper catalysts
17:00 - 17:30h S1.1-I4	**Orestes Rivada Wheelaghan** Electrochemical carbon dioxide reduction with transition-metal based complexes

Thursday 9th - Session 2.1

Chair: **Julio Lloret Fillol**

09:00 - 09:30h S2.1-I1	**María Escudero-Escribano** Tailored Electrocatalyst Materials for Renewable Fuels
09:30 - 10:00h S2.1-I2	**Jan Rossmeisl** Catalysis on High Entropy Alloys
10:00 - 10:30h S2.1-I3	**Laia Francàs Forcada** Tunning the catalytic properties of nanoparticles for solar fuels applications
10:30 - 11:15h	**Coffee Break**

Thursday 9th - Session 2.2

Chair: **Julio Lloret Fillol**

11:15 - 11:30h S2.2-O1	**Ahmed Sheta** Electrocatalytic Carbonylation of Organic Halides Utilizing CO2 Reduction
11:30 - 11:45h S2.2-O2	**Lifeng Liu** Hydrogen Production via Seawater Electrolysis at High Current Densities without Interfering Chlorine Evolution
11:45 - 12:00h S2.2-O3	**Drialys Cardenas Morcoso** Investigation of directly fused metalloporphyrins polymers for OER catalysis: molecular or material true catalysts?
12:00 - 12:15h S2.2-O4	**Fernanda Romeiro** Assessing Stability and Exploring the Role of Carbonate Electrolytes in Two-Electron Water Oxidation to H2O2
12:15 - 12:30h S2.2-O5	**Samira Siahrostami** Hydrogen peroxide, an oxidant, or a potential fuel for next generation batteries
12:30 - 12:45h S2.2-O6	**David Carvajal** Electrochemical transformation of HMF in added value compounds using inexpensive materials for anodes and cathodes
12:45 - 13:00h S2.2-O7	**Andrew Akbashev** Cation Leaching, Oxygen Intercalation and Extreme Oxidation in Perovskites during Oxygen Evolution Reaction

Thursday 9th - Session 2.3

Chair: **Carla Casadevall Serrano**

15:30 - 16:00h S2.3-I1	**Erwin Reisner** Electrocatalysts for the Assembly of Light-to-Chemical Converting Solar Panels
16:00 - 16:30h S2.3-I2	**Marcella Bonchio** Supramolecular architectures for artificial photosynthesis

16:30 - 16:35h
S2.3-S1
Jon Ferrier
Royal Society of Chemistry

16:35 - 17:05h
S2.3-I3
Victor Mougel
Molecular bio-inspired strategies for the design of electrocatalytic systems for CO2 reduction

17:05 - 17:35h
S2.3-I4
Marc Robert
Molecular electrochemical reduction of N2-to-NH3 with a Mn catalyst

Friday 10th - Session 3.1

Chair: **Carla Casadevall Serrano**

09:00 - 09:30h
S3.1-I1
Beatriz Roldan Cuenya
Unveiling the Evolution of Energy Conversion Electrocatalysts through Operando Microscopy and Spectroscopy

09:30 - 10:00h
S3.1-I2
Raffaella Buonsanti
Well-defined nanocrystals for selective CO2 electroreduction

10:00 - 10:30h
S3.1-I3
Núria López
Modeling in photoelectrocatalysis

10:30 - 11:15h
Coffee Break

Friday 10th - Session 3.2

Chair: **Carla Casadevall Serrano**

11:15 - 11:30h
S3.2-O1
Federico Franco
From molecules to nanostructured materials: novel opportunities for electrocatalytic CO2 reduction

11:30 - 11:45h
S3.2-O2
Geyla Caridad Dubed Bandomo
Development and mechanistic study of Single Sites in 2D-Covalent Organic Frameworks for Electrocatalytic CO2 reduction

11:45 - 12:00h
S3.2-O3
Paula Sebastian Pascual
Surface characterization of copper electrocatalysts by lead underpotential deposition

12:00 - 12:15h
S3.2-O4
Silvio Osella
Mechanistic Study of CO2 Reduction to Methane and Ethylene on Singe Atom Catalyst Based 2D-MOF

12:15 - 12:30h
S3.2-O5
Petru Albertini
Colloidal ALD-grown metal-oxide encapsulation stabilizes copper nanoparticles during CO2RR

Friday 10th - Session 3.3

Chair: **Carla Casadevall Serrano**

15:30 - 15:45h
S3.3-O1
Josep Albero Sancho
Synergistic Cu-Fe ultrasmall nanoparticles supported on 3D n-doped graphene for selective electrochemical CO2 reduction at low overpotential

15:45 - 16:00h
S3.3-O2
Beatriu Domingo Tafalla
Electro- and Photo-induced Interfacial Charge Transfers in Nanocrystalline Mesoporous TiO2 and TiO2/Iron Porphyrin Sensitized Films Under CO2 Reduction Catalysis

16:00 - 16:15h
S3.3-O3
Rotem Geva
Molten-State Synthesis of Transition-Metal Phosphides for Electrochemical Applications

16:15 - 16:30h
S3.3-O4
Santiago Rodriguez Jimenez
Self-Assembled Liposomes Enhance Electron Transfer for Efficient Photocatalytic CO2 Reduction

16:30 - 16:45h
S3.3-O5
Venkata Siva Rama Krishna Tandava
Enhanced Electrocatalytic CO2 reduction: A Cascade Mechanistic approach enabled by a tandem setup

16:45 - 17:00h
S3.3-O5
Camilo A. Mesa
Cu-based electrodes for hydrogen evolution and CO2 reduction reactions

17:00 - 17:15h
e-FuelSyn Closing

#GreenE – Advances in Green Energy Carriers

Monday 6th - Session 1.1

Chair: **Yun Jung Lee**

15:20 - 15:30h	**Symposium Opening**
15:30 - 16:00h 1.1-I1	**Nagore Ortiz Vitoriano** Unlocking the Potential of Aqueous and Aprotic Metal-Air Batteries
16:00 - 16:30h 1.1-I2	**Elena Mas Marzá** Electrochemistry for biomass valorization and energy storage
16:30 - 17:00h 1.1-I3	**Jong Eun Hong** A Way to CO2-free power generation: Direct Ammonia fueled Solid Oxide Fuel Cells
17:00-17:15 1.1-O1	**Xinyi Zhang** Technoeconomic Analysis of a Coupled Catalytic Photoelectrochemical System for Hydrogen Generation over its Lifecycle
17:15-17:30 1.1-O2	**Hyungjun Lee** Nickel Oxide Nanoparticle-decorated BaCo0.4Fe0.4Zr0.1Y0.1O3-δ Composite Cathode for High Performance Protonic Ceramic Fuel Cells

Tuesday 7th - Session 2.1

Chair: **Woon Suk Jang**

09:00 - 09:30h S2.1-I1	**Hee Jung Park** 2-dimensional materials based on oxide and their various applications
09:30 - 10:00h S2.1-I2	**Takamasa Mori** Characterization of Multi-Component Dense Slurry for Controlling Particles Packing Structure during Coating and Drying

10:00 - 10:30h
S2.1-I3
Byoung Woo Kang
Superior compatibilities of oxide-based SE for all solid-state battery

10:30 - 11:15h
Coffee Break

Tuesday 7th - Session 2.2

Chair: **Kyung Joong Yoon & Taeseup Song**

11:15 - 11:45h
S2.2-I1
Kyung Joong Yoon
Infiltration of Nanocatalysts for Solid Oxide Fuel Cells

11:45 - 12:15h
S2.2-I2
Yong-Mook Kang
Balancing the inharmony between electrons and alkali ions in layered cathode materials

12:15 - 12:30h
S2.2-O1
Jose Mata
Hydrogen storage in the liquid form using C-H covalent bonds: liquid organic hydrogen carriers (LOHCs)

12:30 - 12:45h
S2.2-O2
Sixto Giménez Julia
Green Hydrogen Production and Waste Valorization with All-Inorganic Halide Perovskites Nanocrystals

12:45 - 13:00h
S2.2-O3
Seungwoo Lee
Structure design of Si-based anode material for high performance all-solid-state batteries

13:00 - 13:15h
GreenE Closing

#SusBat - Enabling Betond Classical Li-ion Batteries through materials development and sustainability

Tuesday 7th - Session 1.1

Chair: **Nagore Ortiz**

08:50 - 09:00h	**Symposium Opening**
09:00 - 09:30h 1.1-I1	**Husam Alshareef** Electrode & Electrolyte Engineering in Rechargeable Aqueous Zinc-ion Batteries
09:30 - 10:00h 1.1-I2	**Roza Bouchal** Highly Concentrated Aqueous Electrolytes for Zinc Metal Batteries
10:00 - 10:30h 1.1-I3	**Stefan Freunberger** Reaction mechanisms and phase evolution in main group redox chemistries
10:30 - 11:15h	**Coffee Break**

Tuesday 7th - Session 1.2

Chair: **Alexis Grimaud**

11:15 - 11:30h 1.2-O1	**Domenico Frattini** Towards the Sustainable Industrialitzation of Electrically Rechargable Zinc-Air Batteries
11:30 - 11:45h 1.2-O2	**Nuria Tapia Ruiz** A comparative study of solid electrolyte interface evolution in ether and ester-based electrolytes for Na-ion batteries
11:45 - 12:00h 1.2-O3	**Adrian Beda** Hard carbon anodes derived from eco-friendly precursors for Na-ion batteries
12:00 - 12:15h 1.2-O4	**Tjaša Pavčnik** Fluorinated Alkoxyborate and Alkoxyaluminate-Based Electrolytes for Post-Lithium Energy Storage

12:15 - 12:30h
1.2-O5
Luisa de Marco
Hybrid nanostructured systems for sustainable batteries

12:30 - 12:45h
1.2-O6
Olivera Lužanin
A Reliable Way of Accessing Intrinsic Electrochemical Performance of Organic Cathodes in Multivalent Batteries

Wednesday 8th - Session 1.3

Chair: **Maria Lukatskaya**

15:30 - 16:00h
1.3-I1
Milica Vujković
What Drives the Synthesis of Mixed Polyanionic Na4Fe3(PO4)2P2O7 Cathode Material and Determines its Electrochemical Behavior?

16:00 - 16:30h
1.3-I2
Corsin Battaglia
Towards High-Voltage Solid-State Lithium-Metal Batteries

Wednesday 8th - Session 2.1

Chair: **Nagore Ortiz**

09:00 - 09:30h
2.1-I1
Rebeca Marcilla
Electroactive Organic Materials for More Sustainable Batteries

09:30 - 10:00h
2.1-I2
Manuel Souto
Organic batteries based on redox-active Covalent Organic Frameworks

10:00 - 10:30h
2.1-I3
Marie Liesse Doublet
Recent Advances in Theoretical Methodology to Battery Interfaces

10:30 - 11:45h
Coffee Break

Wednesday 8th - Session 2.2

Chair: **Alexis Grimaud**

11:15 - 11:45h 2.2-I1	**Giuseppe Elia** Addressing key challenges in the development "beyond Li-ion" chemistries
11:45- 12:15h 2.2-I2	**Hans Georg Steinrück** Understanding the electrochemistry of ion batteries across length scales
12:15 - 12:45h 2.2-I3	**Taeseup Song** Interface engineering for high-performance all-solid-state lithium-metal batteries

Wednesday 8th - Session 2.3

Chair: **Maria Lukatskaya**

15:30 - 15:45h 2.3-O1	**Claudio Gerbaldi** An overview on polymer-based electrolytes with high ionic mobility for safe operation of solid-state batteries
15:45 - 16:00h 2.3-O2	**Arkaitz Fidalgo Marijuan** Sustainable polymer based materials as electrolytes in lithium-ion batteries
16:00 - 16:15h 2.3-O3	**Maria Angeles Cabañero Martínez** LNMO: Cobalt-free cathode material for the next generation of Li-ion batteries
16:15 - 16:30h 2.3-O4	**Alfonso Gallo Bueno** Unsupervised machine learning to classify crystal structures according to their structural distortion: A case study on Li-argyrodite solid-state electrolytes
16:30 - 16:45 2.3-O5	**Alban Albertengo** Influence of Vacuum Treatment on Electrolyte Interpenetration in Microstructured Electrode Materials for Flexible Li-Ion Microbatteries
16:45 - 17:00h	**SusBat Closing**

#PerFut - Metal Halide Perovskites Fundamental Approaches and Technological Challenges

Tuesday 7th - Session 1.1

Chair: **Annalisa Bruno**

08:50 - 09:00h	**Symposium Opening**
09:00 - 09:30h S1.1-I1	**Maksym Kovalenko** Engineering Single Photon Emission and Collective Phenomena with Lead Halide Perovskite Nanocrystals
09:30 - 10:00h S1.1I2	**Nripan Mathews** Exploiting the ionic and electronic properties of halide perovskites for functional devices
10:00 - 10:30h S1.1-I3	**Mónica Morales Masis** Single Source Vapor Deposition of Hybrid and Inorganic Halide Perovskites
10:30 - 11:15h	**Coffee Break**

Tuesday 7th - Session 1.2

Chair: **Mónica Morales Masis**

11:15 - 11:30h S1.2-O1	**Antonio Guerrero** Interplay between ion migration and Contacts in Halide Perovskite Memristors
11:30 - 11:45h S1.2-O2	**Ismael Guillén** Perovskite Thin-Film Single Crystal for a Massive Current Tunability Memristor
11:45 - 12:00h S1.2-O3	**Matteo Zaffalon** Extreme γ-ray radiation hardness and high scintillation yield in perovskite nanocrystals

12:00 - 12:15h
S1.2-O4
Andrea Erroi
Ultrafast and Radiation Hard Nanocomposite Scintillators based on CsPbBr3 Nanocrystals from High-Throughput Turbo-Emulsion Synthesis

12:15 - 12:30h
S1.2-O5
Francesco Carulli
Silica-encapsulated perovskite nanocrystals for effective X-ray-activated singlet oxygen production towards enhanced radiotherapy applications

12:30 - 12:45h
S1.2-O6
Kostiantyn Sakhatskyi
Stable Poisson-statistics-limited X-ray imaging with solution-grown perovskite single-crystal detectors

12:45 - 13:00h
S1.2-O7
Tiankai Zhang
Ion-modulated radical doping of spiro-OMeTAD towards more efficient and stable perovskite solar cells

Tuesday 7th - Session 1.3

Chair: **Rafael Abargues**

15:30 - 16:00h
S1.3-I1
Senol Öz
Flexible perovskite solar cells for power sources in a low carbon society

16:00 - 16:30h
S1.3-I2
Trystan Watson
The route to continuous roll to roll manufacturing of flexible perovskite solar cells using a carbon electrode

16:30 - 17:00h
S1.3-I3
Severin Habisreutinger
Perovskite PV, a more sustainable future for solar

17:00 - 17:15h
S1.3-O1
Ke Xu
Slot-die coated triple-halide perovskite for efficient and scalable perovskite/silicon tandem solar cells

Wednesday 8th - Session 2.1

Chair: **Wang Feng**

09:00 - 09:15h S2.1-O1	**Martin Fernandez** The Trade-Off Between Efficiency and Electrical Stability in Green Mn2+ Doped Perovskite Light-Emitting Diodes
09:15 - 09:30h S2.1-O2	**Giovanni Vescio** Hierarchical Approach to the Electrical and Optical Properties of Fully Inorganic Inkjet-Printed Nanocrystalline Perovskite CsPbBr3 Green Emitting LED
09:30 - 09:45h S2.1-O3	**Aurora Rizzo** Stabilizing Wide Bandgap Triple-Halide Perovskite Alloy through Organic Gelators
09:45 - 10:00h S2.1-O4	**Zongbao Zhang** Ethane-1,2-diammonium iodide and lead acetate synergistically stabilize γ-CsPbI3 perovskite solar cells
10:00 - 10:15h S2.1-O5	**Rafael Abargues** New Materials and Synthetic Approaches for Sustainable Device Fabrication via Multiscale Perovskite Structures
10:15 - 10:30h S2.1-O6	**Sofia Masi** Effect of PbS QDs on Strain and Optical Properties of Perovskite Matrix
10:30 - 11:15h	**Coffee Break**

Wednesday 8th - Session 2.2

Chair: **Pablo P. Boix**

11:15 - 11:45h S2.2-I1	**Nam-Gyu Park** Facet Engineering for Stable and Efficient Perovskite Solar Cells
11:45- 12:15h S2.2-I2	**Iván Mora-Seró** Stabilization of Halide Perovskite for Optoelectronic Applications

12:15 - 12:45h
S2.2-I3

Maria Antonietta Loi
Carbazole Based Self-assembly Monolayers for Highly Efficient Sn/Pb- Perovskite Solar Cells

Wednesday 8th - Session 2.3

Chair: **Iván Mora-Seró**

15:30 - 16:00h
S2.3-I1

Laura Schelhas
Understanding degradation in metal halide perovskite solar cells and modules

16:00 - 16:30h
S2.3-I2

Lioz Etgar
Chiral low dimensional perovskite and Bifacial Fully printable perovskite solar cells

16:30 - 16:45h
S2.3-O1

David Tanenbaum
Degradation Pathways of Screen-Printed Mesoporous Carbon Perovskite Solar Cells

16:45 - 17:00h

PerFut Closing

#PhotoPero23 - Photophysics of halide perovskites and related materials – from bulk to nano

Wednesday 8th - Session 1.1

Chair: **Sascha Feldmann**

08:50 – 09:00h	**Symposium Opening**
09:00 – 09:30h S1.1-I1	**William Tisdale** Persistent Enhancement of Exciton Diffusivity in CsPbBr3 Nanocrystal Solids
09:30 – 10:00h S1.1-I2	**Alexander Efros** Perovskite materials for enhanced optoelectronic applications
10:00 - 10:30h S1.1-I3	**Sam Stranks** Shining Bright: Using Luminescence to Unveil Photophysical Behaviour in Halide Perovskite Devices

Wednesday 8th - Session 1.2

Chair: **Loreta A. Muscarella**

11:15 – 11:30h S1.2-O1	**Quinten Akkerman** Confined Excitons in Spherical-Like Halide Perovskite Quantum Dots
11:30 – 11:45h S1.2-O2	**Chenglian Zhu** Many-body Correlations and Exciton Complexes in CsPbBr3 Quantum Dots
11:45– 12:00h S1.2-O3	**Andrea Pianetti** Lead Chalcohalide Nanocrystals: Phase Selective Synthesis and Novel Heterostructures with Cesium Lead Perovskites

12:00 - 12:15h
S1.2-O4
Ilka Vincon
Controlling the Interaction of Perovskite Nanocrystals with Circularly Polarized Light

12:15- 12:30h
S1.2-O5
Francesca Cova
Role of intra-gap electronic levels in scintillating perovskite nanocrystals and nanocomposites

12:30 - 12:45h
S1.2-O6
Nadesh Fiuza
Enhanced Exciton-to-Dopant Energy Transfer in Mn2+-Doped Perovskite Nanocrystals by Post-synthesis Surface Passivation

12:45 – 13:00h
S1.2-O7
Irina Gushchina
Excitation intensity- and size-dependent halide photosegregation in CsPb(I0.5Br0.5)3 perovskite nanocrystals

Wednesday 8th - Session 1.3

Chair: **Jovana Milic**

15:30 – 16:00h
S1.3-I1
Paulina Plochocka
2D Perovskite—Exciting Playground for exciton and polaron studies

16:00 - 16:30h
S1.3-I2
Tze-Chien Sum
Photophysics of Low-Dimensional Halide Perovskites

16:30 – 17:00h
S1.3-I3
Laura Herz
Charge-carrier dynamics in lead mixed-halide and low-dimensional perovskites

17:00 - 17:30h
S2.3-I1
Gerd Bacher
Polarized Luminescence from Single Lead Halide Perovskite Nanocrystals

Thursday 9th - Session 2.1

Chair: **Maksym Kovalenko**

09:00 - 09:30h
S2.1-I1
Bruno Ehrler
On the (in)stability of 2D perovskites

09:30 – 10:00h
S2.1-I2
Qihua Xiong
Manipulating Exciton Polariton Condensates at Room Temperature

10:00 - 10:30h
S2.1-I3
Loreta A. Muscarella
Strain as a double-edged sword for tuning properties in metal-halide perovskites

10:30 - 11:15h
Coffee Break

Thursday 9th - Session 2.2

Chair: **Quinten Akkerman**

11:15 – 11:30h
S2.2-O1
Tobias Antrack
Enhancing Luminescence Efficiency by Controlled Island Formation of CsPbBr3 Perovskite

11:30 – 11:45h
S2.2-O2
Rafael Sánchez Sánchez
Towards a deeper understanding of the electro-ionic coupling mechanisms in high-performance Perovskite Light-emitting Diodes

11:45– 12:00h
S2.2-O3
Maxim Simmonds
Illumination cycle dependence of defect signatures for MAPbBr3 microplatelets: as seen in a illumination-cycle and repetition rate dependent transient photoluminescence study

12:00 - 12:15h
S2.2-O4
Navendu Mondal
Hot Carrier Cooling Dynamics in Perovskite Nanostructures: Impact of Nanoconfinement and Surface Traps

12:15- 12:30h
S2.2-O5
Matteo Zaffalon
Understanding Thermal and A-Thermal Trapping Processes in Lead Halide Perovskites Towards Effective Radiation Detection Schemes

12:30 - 12:45h
S2.2-O6
Andrei Mitrofanov
Multiple-Ring Aromatic Cation Engineering in Low-Dimensional Perovskites

12:45 – 13:00h
S2.2-O7
Simon Boehme
Strongly Confined CsPbBr3 Quantum Dots as Quantum Emitters and Building Blocks for Rhombic Superlattices

#2DPERO – 2D Perovskites: Synthesis, Properties, and Applications

Thursday 9th - Session 1.1

Chair: **Simon Kahmann**

08:50 - 09:00h	**Symposium Opening**
09:00 - 09:15h S1.1-O1	**Rosanna Mastria** Tuning dimensionality of Quasi 2D Perovskite single crystals: a rational approach.
09:15 - 09:30h S1.1-O2	**Łukasz Przypis** Advances in High-Quality Single Crystal Growth: New Ruddlesden Popper Tin Halide Perovskites.
09:30 - 09:45h S1.1-O3	**Lucas Scalon** Controlling Phase Purity in Chiral 2D Perovskites.
09:45 - 10:00h S1.1-O4	**Wouter Van Gompel** A Conjugated Rigid Organic Cation for HOIPs with Enhanced Stability and Optoelectronic Properties.
10:00 - 10:15h S1.1-O5	**Marta Campolucci** Efficient Energy Transfer Process in 2D (C6H5CH2NH3)2(Pb,Mn)Br4 Layered Metal Halide.
10:15 - 10:30h S1.1-O6	**Simon Nussbaum** Towards organic-inorganic hybrid type-II layered perovskite nano-heterostructures.
10:30 - 11:15h	**Coffee Break**

Thursday 9th - Session 1.2

Chair**: Loreta A. Muscarella**

11:15 - 11:45h S1.2-I1	**Lorenzo Malavasi** 2D halide perovskites: a fascianting playground for designing new materials
11:45 - 12:15h S1.2-I2	**Teresa Gatti** Compositional engineering in 2D monolayer silver-bismuth double perovskites
12:15 - 12:45h S1.2-I3	**Letian Dou** Two-Dimensional Organic-Perovskite Hybrid Materials and Heterostructures

Friday 10th - Session 2.1

Chair**: Simon Kahmann**

09:00 - 09:30h S2.1-I1	**Daniele Meggiolaro** Defects activity and broad emission in 2D perovskites: a theoretical perspective
09:30 - 10:00h S2.1-I2	**Ferry Prins** Visualizing Exciton Transport in 2D Perovskites
10:00 - 10:30h S2.1-I3	**Andrea Zanetta** 2D materials and low-dimensional perovskites for photovoltaic applications
10:30 - 11:15h	**Coffee Break**

Friday 10th - Session 2.2

Chair**: Loreta A. Muscarella**

11:15 - 11:45h S2.2-I1	**Maria Antonietta Loi** Boosting the performance of Ruddlesden-Popper phases light-emitting diodes through isopropylammonium addition – towards efficient blue emitters
11:45 - 12:00h S2.2-O1	**Szymon Zelewski** Complementary Photocurrent and Photothermal Characterisation of 2D Perovskite Light Emitting Diodes
12:00 - 12:15h S2.2-O2	**Angelica Simbula** Exciton splitting in thin-crystal 2D layered hybrid perovskites
12:15 - 12.:30h S2.2-O3	**Eelco Tekelenburg** Impact of Two Diammonium Cations on the Structure and Photophysics of Layered Sn-based Perovskites
12:55 - 13:00h	**2DPERO Closing**

#NewOPV - New concepts for stable non-fullerene based organic solar cells and their applications

Thursday 9th - Session 1.1

Chair: **Martijn Kemerink**

08:50 - 09:00h	**Symposium Opening**
09:00 - 09:30h S1.1-I1	**Gitti Frey** Studying the bulk heterojunction morphology using selective staining and electron microscopy
09:30 - 10:00h S1.1-I2	**Christoph J. Brabec** Overcoming fundamental challenges in OPV
10:00 - 10:30h S1.1-I3	**Zhe Li** Toward overcoming the stability challenge of organic solar cells
10:30 - 11:15h	**Coffee Break**

Thursday 9th - Session 1.2

Chair: **Pavel Troshin**

11:15 - 11:45h S1.2-I1	**Ellen Moons** Photostability of high-performance electron-acceptor molecules and polymers
11:45 - 12:15h S1.2-I2	**Chu-Chen Chueh** Improving Thermal, Photo, and Underwater-Stability of Polymer Solar Cells by Interface Engineering
12:15 - 12:45h S1.2-I3	**Markus Scharber** Non-Fullerene Acceptor for Organic Solar Cells

Thursday 9th - Session 1.3

Chair**: Vida Engmann**

15:30 - 15:45h
S1.3-O1
Tanya Kumari
Robust Bilayer Strategy: A New Route for Stable High-Performance Devices

15:45 - 16:00h
S1.3-O2
Shahidul Alam
Investigating the Trade-Off between Photovoltaics Parameters and Thermal Annealing in Non-Fullerene Acceptors Organic Solar Cells

16:00 - 16:15h
S1.3-O3
Xabier Rodríguez-Martínez
Laminated Organic Photovoltaic Modules for Agrivoltaics: an Outdoor Stability Study of All-Polymer and Polymer:Small-Molecule Blends

16:15 - 16:30h
S1.3-O4
Giulia Lo Gerfo M.
Spatio-Temporal Mapping Uncouples Exciton Diffusion from Singlet-Singlet Annihilation in the Electron Acceptor Y6

16:30 - 16:45h
S1.3-O5
Austin Kay
A Realistic Prediction of Indoor OPV Performance

16:45 - 17:00h
S1.3-O6
Uli Würfel
Photoluminescence Measurements of Organic Solar Cells and the Determination of the Quasi-Fermi Level Separation

Friday 10th - Session 2.1

Chair**: Ellen Moons**

09:00 - 09:15h
S2.1-O1
Jens Wenzel Andreasen
Manipulating organic semiconductor morphology with visible light

09:15 - 09:30h
S2.1-O2
Rodrigo Delgado Andrés
Photoelectrochemical Energy Storage with Organic Solar Cells

09:30 - 09:45h
S2.1-O3
Xiao Ma
Identification of the origin of ultralow dark currents in organic photodiodes

09:45 - 10:00h
S2.1-O4
D**avid Garcia Romero**
Overcoming light soaking while increasing the lifetime of non-fullerene solar cells

10:00 - 10:15h
S2.1-O5
Lorenzo Di Mario
Atomic Layer Deposition of Tin Oxide Electron Transport Layer for HighPerformance Organic Solar Cells with Inverted Structure

10:15 - 10:30h
S2.1-O6
Hamed Javanbakht Lomeri
Effect of Interfacial Layer on the Performance of Air-Processed OSC Under both Indoor and 1-Sun Condition

10:30 - 11:15h
Coffee Break

Friday 10th - Session 2.2

Chair**: Tracey Clarke**

11:15 - 11:45h
S2.2-I1
Flurin Eisner
Charge-pair generation in single-component molecular materials

11:45 - 12:15h
S2.2-I2
Martijn Kemerink
Can Organic Solar Cells Surpass the Near-Equilibrium Efficiency Limit?

12:15 - 12:45h
S2.2-I3
Natalie Stingelin
Lessons learnt with doped polymer systems and applied to donor:nonfullerene acceptor photovoltaic blends

Friday 10th - Session 2.3

Chair**: Morten Madsen**

15:30 - 16:00h
S2.3-I1
Tracey Clarke
Quantifying triplet states in non-fullerene acceptors

16:00 - 16:30h
S2.3-I2
Safa Shoaee
On the impact of the energy level offset on carrier recombination in organic non-fullerene acceptor-based solar cells

16:30 - 17:00h
S2.3-I3
Beatriz Romero
Impedance Spectroscopy as a non-destructive technique for Organic Solar Cell characterization

#Adinos - Advances in Inorganic Thin Film Semiconductors for solar Energy Conversion: From photovoltaics to Solar Fuels

Tuesday 7th - Session 1.1

Chair: **Krishnan Rajeshwar**

08:50 - 09:00h	**Symposium Opening**
09:00 - 09:30h S1.1-I1	**Wolfram Jaegermann** Advanced Thin Film Photovoltaic and Photoelectrosynthetic Cells – Physical Boundary Conditions and Material Science Challenges
09:30 - 10:00h S1.1-I2	**David Tilley** Copper Oxide and Antimony Selenide Photocathodes for Solar Hydrogen Production
10:00 - 10:30h S1.1-I3	**Edgardo Saucedo Silva** Emerging (Sb,Bi)(S,Se)(Br,I) van der Waals chalco-halide compounds for photovoltaic applications
10:30 - 11:15h	**Coffee Break**

Tuesday 7th - Session 1.2

Chair: **Xiaojing Hao**

11:15 - 11:45h S1.2-I1	**Robert Hoye** Bismuth chalcohalide and chalcogenide compounds for photovoltaics and solar fuels
11:45- 12:15h S1.2-I2	**Fatwa Abdi** Development of Complex Metal Oxide Photoelectrodes for Solar Water Splitting

12:15 - 12:45h
S1.2-I3

Rajiv Ramanujam Prabhakar
Electron transport layers for CO2 reduction photocathodes

Tuesday 7th - Session 1.3

Chair: **Sudhanshu Shukla**

15:30 - 16:00h
S1.3-I1

Wouter Maijenburg
Photoelectrochemical Properties of Cu-Ga-Se Photocathodes with Compositions Ranging from CuGaSe2 to CuGa3Se5

16:00 - 16:15h
S1.3-O1

Ronen Gottesman
Stepping Out of Equilibrium: Reaching New Chemical Boundaries of Thin Film Semiconductors by Novel Non-equilibrium Synthesis Approaches

16:15 - 16:30h
S1.3-O2

Kaiwen Sun
Kesterite-based photocathode for photoelectrochemical CO2 reduction and NH3 production

16:30 - 16:45h
S1.3-O3

Romain Scaffidi
Back Bandgap-Graded Kesterite Cu2Zn(Snx,Ge1-x)Se4 Thin Films for Solar Cell Applications

Wednesday 8th - Session 2.1

Chair: **Krishnan Rajeshwar**

09:00 - 09:30h S2.1-I1	**Gian-Marco Rignanese** New High-Efficiency Photovoltaic Absorbers from High-Throughput Ab Initio Screening
09:30 - 10:00h S2.1I2	**Alex Ganose** Design principles for emerging chalcogenide photovoltaics
10:00 - 10:30h S2.1-I3	**Johan Lauwaert** Predicting the maximal efficiency of direct Z-scheme artificial photosynthesis: 11.4 %
10:30 - 11:15h	**Coffee Break**

Wednesday 8th - Session 2.2

Chair: **Wolfram Jaegermann**

11:15 - 11:45h S2.2-I1	**Byungha Shin** Monolithic photoelectrochemical tandem devices consisting of tunnel oxide passivated contact silicon and BiVO4 enabling unassisted water splitting
11:45- 12:15h S2.2-I2	**Thomas Hannappel** Photoelectrochemical reactions on epitaxial tandem absorber structures for highly efficient solar fuels production
12:15 - 12:45h S2.2-I3	**Nina Plankensteiner** Combining photovoltaics and anion-exchange membrane water electrolysis with high surface area nickel nanomesh electrodes for low-cost green hydrogen

Wednesday 8th - Session 2.3

Chair: **Wolfram Jaegermann**

15:30 - 16:00h S2.3-I1	**Mirjana Dimitrievska** Understanding the growth mechanism of BaZrS3 chalcogenide perovskite thin films from sulfurized oxide precursors
16:00 - 16:30h S2.3-I2	**Julien Bachmann** Atomic-layer approaches towards 'extremely thin' chalcogenide- based photovoltaics: A unique combination of advantages
16:30 - 17:00h S2.3-I3	**Chuck Hages** Progress in Low-temperature Synthesis of Chalcogenide Perovskites for PV
17:00 - 17:30h S2.3-I4	**Diego Colombara** Cu(In,Ga)Se2 photovoltaics from fundamental questions to innovation pathways
17:30 - 17:45h	**Adinos Closing**

#DeModeP23 - Characterisation and Modeling of Devices Fuels

Thursday 9th - Session 1.1

Chair: **Juan Bisquert**

15:20 - 15:30h	**Symposium Opening**
15:30 - 16:00h S1.1-I1	**Thomas Kirchartz** Shallow defects and long charge carrier lifetimes in lead-halide perovskites
16:00 - 16:30h S1.1-I2	**Evelyne Knapp** Machine Learning Assisted Model Parameter Extraction for Perovskite Solar Cells
16:30 - 17:00h S1.1-I3	**Oskar J. Sandberg** Method to Probe the Built-in Voltage of Thin Film Organic Photovoltaic Devices
17:00 - 17:15h S1.1-O1	**James Lerpiniere** Simulating Hot Carrier Dynamics in Halide Perovskites
17:15 - 17:30h S1.1-O2	**Leonie Pap** Improved current generation for an ITO-free semitransparent organic solar cell using a multilayer silver electrode as distributed Bragg reflector

Friday 10th - Session 2.1

Chair: **George Volonakis**

09:00 - 09:30h S2.1-I1	**Yoann Olivier** Insights from computational modeling on the singlet-triplet conversion in MR-TADF and invert singlet-triplet gap materials

09:30 - 10:00h
S2.1I2
Oleg Prezhdo
Ab Initio Quantum Dynamics of Charge Carriers in Modern Photovoltaic Materials

10:00 - 10:30h
S2.1-I3
Shuxia Tao
Atomistic multiscale modelling of defects in halide perovskites

10:30 - 11:15h
Coffee Break

Friday 10th - Session 2.2

Chair: **Alison Walker**

11:15 - 11:45h
S2.2-I1
George Volonakis
Photovoltaic and excitonic properties of novel perovskite-like materials

11:45- 12:15h
S2.2-I2
Daniele Meggiolaro
A Theoretical Tour of Metal-Halide Perovskites Defects Chemistry: from Lead to Tin

Friday 10th - Session 2.3

Chair: **Enrique Hernández Balaguera**

15:30 - 16:00h
S2.3-I1
Pilar López Varo
Modeling of Perovskite Solar Cells from Device to Energy Yield Calculations

16:00 - 16:30h
S2.3-I2
Juan Bisquert
Advances in kinetics processes of halide perovskite solar cells and synapses by neuron-model equations and electrooptical techniques

16:30 - 16:45h
S2.3-O1
Greta Bucyte
Carrier diffusion in a matter of minutes?

16:45 - 17:00h
S2.3-O2
Miquel Casademont
Spectrum on Demand Light Source (SOLS) for Advanced Photovoltaic Characterization

17:00 - 17:15h
DeModeP23 Closing

#NCFun23 - Fundamental Processes in Nanocrystals and 2D Materials

Thursday 9th - Session 1.1

Chair: **Shalini Singh**

08:50 – 09:00h	**Symposium Opening**
09:00 – 09:30h S1.1-I1	**Sara Bals** 3D Characterization of Nanocrystal Transformations by Electron Tomography
09:30 – 10:00h S1.1-I2	**Sandrine Ithurria** II-VI semiconductor NPLs: Control the composition and the shape
10:00 - 10:30h S1.1-I3	**Celso de Mello Donega** Quantum Confined Colloidal Copper-Chalcogenide Based Hetero-Nanorods
10:30 - 11:15h	**Coffee Break**

Thursday 9th - Session 1.2

Chair: **Sandrine Ithurria**

11:15 – 11:30h S1.2-O1	**Ryan Crisp** Synthetic Developments for Chalcogenide Perovskites and Related Materials Focusing on the Optoelectronic Properties of BaTiS3 and BaZrS3 Nanocrystals
11:30 – 11:45h S1.2-O2	**Niraj Patil** Colloidal Synthesis of Cesium Copper Chalcogenide Nanocrystals as a Promising Earth-abundant Thermoelectric Material
11:45– 12:00h S1.2-O3	**Nagaarjhuna Arumuga Kani** The evolution of the surface and bulk during the synthesis of oxide electrocatalysts

12:00 - 12:15h
S1.2-O4

Raquel Galian
Impact of Surface Chemistry on the Application of Colloidal Semiconductor Nanocrystals

12:15- 12:30h
S1.2-O5

Evert Dhaene
Monoalkyl phosphinic acids as ligands in nanocrystal synthesis and its binding affinity towards nanocrystal surfaces

12:30 - 12:45h
S1.2-O6

Francesco Carulli
Stokes Shift Engineered Mn:CdZnS/ZnS Nanocrystals as Reabsorption-Free Nanoscintillators in High Loading Polymer Composites

12:45 – 13:00h
S1.2-O7

Matteo Zaffalon
Sb-Doped Metal Halide Nanocrystals: A 0D versus 3D Comparison

Thursday 9th - Session 1.3

Chair: **Stefano Toso**

15:30 – 16:00h
S1.3-I1

Cecilia Mattevi
A platform of 3D printed energy storage devices for wearable electronics

16:00 - 16:30h
S1.3-I2

Victor Klimov
Solution-Processable Colloidal Quantum Dot Laser Diodes

16:30 – 16:35h
S1.3-S1

Edward Gardner
Royal Society of Chemistry

16:35 – 17:05h
S1.3-I3

Pieter Geiregat
Stimulated Emission and Lasing through Bulk Nanocrystals

17:05 – 17:20h
S1.3-O1

Louis Biadala
Insight on the electronic properties of CdSe nanoplatelets from scanning tunneling microscopy

17:20– 17:35h
S1.3-O2

Ivo Tanghe
On the Determination of Carrier Temperature in Direct Band Gap Semiconductors

Friday 10th - Session 2.1

Chair: Sergio Brovelli

09:00 - 09:15h S2.2-O1	**Quinten Akkerman** Controlling the Nucleation and Growth Kinetics of Spheroidal Lead Halide Perovskite Quantum Dots
09:15- 09:30h S2.2-O2	**Sara Mecca** Robust, reproducible, low waste and large scale procedure for high quality CSPBBR3 nanobricks synthesis for scintillation
09:30 - 09:45h S2.2-O3	**Clara Otero-Martínez** Mixing A-cations improves the Photoluminescence and Stability of Lead Halide Perovskite Nanocrystals
09:45 – 10:00h S2.2-O4	**Nikolaos Livakas** Selective anion exchange reactions on lead halide perovskite nanocrystals
10:00 - 10:15h S2.2-O5	**Roberta Pascazio** Molecular Dynamics Simulations of Anion Exchange Mechanisms in CsPbX3 Nanocrystals
10:15 - 10:30h S2.2-O6	**Andriy Stelmakh** Computational Design of Surface Capping Ligands for Colloidal Lead Halide Perovskite Nanocrystals
10:30 - 11:15h	**Coffee Break**

Friday 10th - Session 2.2

Chair: Valerio Pinchetti

11:15 – 11:45h S2.2-I1	**Liberato Manna** Metal Halide Nanocrystals: Synthesis and Optical Properties
11:45 – 12:15h S2.2-I2	**Sergio Brovelli** Recent Advancements in QD and QD-based Nanocomposites for Radiation Detection
12:15- 12:45h S2.2-I3	**Yehonadav Bekenstein** Free electron triggered superfluorescence from perovskite quantum dots superlattices

12:45 - 13:00h
S2.2-O1

Stefano Toso
Collective Diffraction Effects in Perovskite Nanocrystal Superlattices

13:00– 13:15h
S2.2-O2

Ihor Cherniukh
Shape-Directed Co-Assembly of Lead Halide Perovskite Nanocubes into Superfluorescent Multicomponent Nanocrystal Superlattices

Friday 10th - Session 2.3

Chair: **Alina Schimpf**

15:30 – 16:00h
2.3-I1

Richard Robinson
Magic from Magic Sized Clusters: Isomerization and Hierarchical Multiscale Ordering of Clusters into Chiral Films

16:00 - 16:30h
2.3-I2

Emil Hernandez
Halide-driven polymorph selectivity in the synthesis of MnX (X= S, Se) nanoparticles

16:30 – 17:00h
1.1-I3

Ivan Infante
The Surface Chemistry of III-V Quantum Dots

17:00 - 17:15h
2.3-O1

Jacopo Pinna
Approaching Bulk Mobility in PbSe Colloidal Quantum Dots 3D Superlattices

17:15 - 17:30h
2.3-O2

Miguel Albaladejo
Bis(stearoyl) Sulfide: A Stable, Odor-free Sulfur Precursor for High-Efficiency Metal Sulfide Quantum Dot Photovoltaics

17:30 - 17:45h

NCFun23 Closing

#ChemNano23 - Chemistry of Nanomaterials

Tuesday 7th - Session 1.1

Chair: **Maksym Yarema**

15:20 – 15:30h	**Symposium Opening**
15:30 – 16:00h 1.1-I1	**Raffaella Buonsanti** Reaction Intermediates in the Synthesis of Colloidal Nanocrystals
16:00 - 16:30h 1.1-I2	**María Ibáñez** From Nano to Macro: The Role of Surface Chemistry on Nanoparticles Sintering
16:30 – 17:00h 1.1-I3	**David Tilley** Photocatalytic particle sheets for Solar hydrogen production
17:00 - 17:30h 1.1-I4	**Stefan Wuttke** Reticular Nanoscience: Bottom-Up Assembly Nanotechnology

Wednesday 8th - Session 2.1

Chair: **Loredana Protesescu**

09:00 – 09:15h 2.1-O1	**Annina Moser** Synthesis and Modelling of Low-Toxicity MIR-active Cu3SbSe4 and CuxSbSe4 Nanocrystals
09:15– 09:30h 2.1-O2	**Jennifer Hong** Engineering the Solid State Synthesis and Processing of Nickel Boride with Enhanced Functionality
09:30 – 09:45h 2.1-O3	**Gabriele Saleh** Atomistic structure and electronic properties of InAs@ZnSe core-shell nanoparticles
09:45 – 10:00h 2.1-O4	**Eline Goossens** Hafnium Oxide Nanocrystals for Contrast Enhanced Vascular Casting: from Mechanistic Insight to Application

10:00 - 10:15h
2.1-O5
Ben Cruyssaert
Exploration of synthesis and surface chemistry of colloidal alkaline-earth chalcogenides

10:15 - 10:30h
2.1-O6
Susana Carregal Romero
Rational design of drug nanovectors for pulmonary administration

10:30 - 11:15h
Coffee Break

Wednesday 8th - Session 2.2

Chair: **Loredana Protesescu**

11:15 - 11:45h
2.2-I1
Maksym Kovalenko
Update on the synthesis and surface chemistry of highly luminescent lead halide perovskite nanocrystals

11:45 – 12:15h
2.2-I2
Andreu Cabot
Electrohydrodynamic 3D printing of energy storage devices

12:15 - 12:45h
2.2-I3
Wolfgang Heiss
Solution epitaxial perovskite micro-resonators for lasing

Wednesday 8th - Session 2.3

Chair: **Maksym Yarema**

15:30 – 16:00h
2.3-I1
Zeger Hens
III-V Quantum Dots, from Synthetic Control to Applications in Lighting and Sensing

16:00 - 16:30h
2.3-I2
Vasiliki Tileli
Probing local electrochemical and electrocatalytic processes in oxygen-evolving oxides in real-time

16:30 - 16:45h
2.3-O1
Dmitry Dirin
Intrinsic formamidinium tin iodide nanocrystals by suppressing the Sn(IV) impurities

16:45 - 17:00h
2.3-O2
Taras Sekh
Co-assembly of Shape Anisotropic Lead Halide Perovskite and Dielectric Nanocrystals into Multicomponent Functional Superlattices

#2DSUSY - 2D Nanomaterials for Sustainable Energy

Thursday 9th - Session 1.1

Chair: **María Antonia Herrero Chamorro**

08:50 – 09:00h	**Symposium Opening**
09:00 – 09:30h S1.1-I1	**Cinzia Casiraghi** Water based, defect free and biocompatible 2D materials inks enabled by supramolecular chemistry
09:30 – 10:00h S1.1-I2	**Xinliang Feng** Advances in Organic 2D Crystals From On-Water Surface Chemistry to Functional Applications
10:00 - 10:30h S1.1-I3	**Manuela Melucci** Graphene enhanced technologies for sustainable water purification
10:30 - 11:15h	**Coffee Break**

Thursday 9th - Session 1.2

Chair: **Eugenio Coronado**

11:15 - 11:45h S1.2-I1	**Ester Vázquez** Sustainable Production of 2D Materials for Soft Robotic Applications
11:45 – 12:15h S1.2-I2	**Gonzalo Abellán** Two-dimensional layered hydroxide materials for energy storage and conversion
12:15 - 12:45h S1.2-I3	**Pedro Atienzar** Optoelectronic Properties of Nanohybrid Materials for Energy Conversion

12:45 - 13:15h — **Michele Melchionna**
A journey into structural modification of carbon nitride for photocatalysis

Thursday 9th - Session 1.3

Chair: **Gonzalo Abellán**

15:30 – 15:45h — **Silvio Osella**
S1.3-O1 — Lighting-up nanocarbons through hybridization: Optoelectronic properties and perspectives

15:45 - 16:00h — **Matteo Crisci**
S1.3-O2 — Electroactive 2D TMDC based polymer hybrid and hydrogel

16:00 - 16:15h — **Paul Debes**
S1.3-O3 — Quantification of Surface-accessible Functional Groups on Carbon Nanodots

16:15 - 16:30h — **Matteo Zaffalon**
S1.3-O4 — Optical and Scintillation Properties of Record-Efficiency CdTe Nanoplatelets toward Radiation Detection Applications

16:30 - 16:45h — **Woo Seok Lee**
S1.3-O5 — Excitonic light emission in 2D silver phenylchalcogenolates

Friday 9th - Session 1.3

Chair: **Ester Vázquez**

09:00 - 09:30h — **Eugenio Coronado**
2.1-I1 — Hybrid 2D heterostructures for spintronics and energy storage

09:30 - 10:00h — **Jeffrey Blackburn**
2.1-I2 — Charge and Energy Transfer Across Monolayer Semiconductor Heterojunctions

10:00 - 10:30h — **M. Carmen Ruiz Delgado**
S1.3-O3 — In silico design and Raman spectroscopy for a better understanding of the electronic properties of 2D polymers

#QMat - Materials for Quantum Technology

Tuesday 7th - Session 1.1

Chair: **José J. Baldoví**

08:50 – 09:00h	**Symposium Opening**
09:00 – 09:30h S1.1-I1	**Jose Lado** Artificial van der Waals multiferroics with twisted two-dimensional materials
09:30 – 10:00h S1.1-I2	**Simone Latini** Designing Quasi-Particles of Light and Photo-Groundstates
10:00 - 10:30h S1.1-I3	**Nicolò Maccaferri** Ultrafast nanophotonics: from all- optical control of exciton dynamics towards plasmon-tailored nano- chemistry and information processing based on cavityelectrodynamics
10:30 - 11:15h	**Coffee Break**

Tuesday 7th - Session 1.2

Chair: **Dimitriy Baranov**

11:15 - 11:45h S1.2-I1	**Luca Celardo** Superradiance in lead halide perovskite nanocrystal superlattices
11:45 – 12:15h S1.2I2	**Elisabetta Collini** 2D Electronic Spectroscopies Towards Quantum Technology Applications: the example of semiconductor quantum dots
12:15 - 12:45h S1.2-I3	**Agustín Mihi** Managing Light with Photonic Architectures made by Nano imprinting Colloidal Inks

Tuesday 7th - Session 1.3

Chair: **Beatriz Martín García**

15:30 – 16:00h S1.3-I1	**Massimiliano Di Ventra** MemComputing: when memory becomes a computing tool
16:00 - 16:15h S1.3-O1	**Andrey Rybakov** Modelling the dynamics of spin waves in 2D limit
16:15 - 16:30h S1.3-O2	**Annalisa Coriolano** Rydberg polaritons in ReS2 crystals
16:30 - 16:45h S1.3-O3	**Umberto Filippi** Color Tunability and Collective Optical Phenomena in Perovskite Nanocrystal Superlattices
16:45 - 17:00h S1.3-O4	**Leon Biesterfeld** Colloidal 2D Lead Chalcogenide Nanoplatelets as Efficient Near-Infrared Emitters
17:00 - 17:15h S1.3-O5	**Lars Klepzig** Narrow and Highly Polarized Photoluminescence of Colloidal 2D PbS Nanoplatelets at 680 nm

Wednesday 8th - Session 2.1

Chair: **Jannika Lauth**

09:00 - 09:30h S2.1-I1	**Daniel Hernangómez Pérez** Unveiling the defect-induced charge and exciton properties of van der Waals interfaces through first-principles
09:30 – 10:00h S2.1-I2	**Michael Zopf** Gas quantum dots as high-quality sources of single and entangled photons
10:00 - 10:30h S2.1-I3	**Francesco Di Stasio** Colloidal semiconductor nanocrystals for classical and quantum light-sources

Wednesday 8th - Session 2.2

Chair: **Jannika Lauth**

11:15 - 11:45h S2.2-I1	**Saúl Velez** Chiral spintronics with magnetic insulators
11:45 - 12:15h S2.2-I2	**Beatriz Martin Garcia** Engineering optical and magnetic properties in layered organic-inorganic metal halide perovskites
12:15 - 12:45h S2.2-I3	**Amilcar Bedoya Pinto** Topological and 2D Materials grown by Molecular Beam Epitaxy: From exotic physics to functional heterostructures
12:45 - 12:50h	**QMat Closing**

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