

MATSUS Fall 2026 Conference (MATSUSFall26)

A1 Beyond Efficiency: Perovskite Optoelectronics for Scalable and Stable Devices

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Guixiang Li, Meng Li and Silver-Hamill Turren-Cruz

Conference Program

October 26th - Day 1 (Monday)	
08:45 - 10:30	Plenary Session - Auditorium
October 27th - Day 2 (Tuesday)	
17:10 - 18:00	Plenary Session - Auditorium
October 28th - Day 3 (Wednesday)	
20:00 - 22:00	Social Dinner
October 29th - Day 4 (Thursday)	
08:55 - 09:00	Opening A1 - Room 3
	Session A1.1.1 Chair: Silver-Hamill Turren-Cruz
09:00 - 09:30	<u>Barry Rand</u> (<i>Department of Electrical and Computer Engineering, Princeton University, Princeton, NJ 08544, United States</i>) From Degradation to Functionality: Metal Transport in Halide Perovskites
09:30 - 10:00	<u>MINHANH TRUONG</u> (<i>Kyoto University, Institute for Chemical Research, Kyoto, Japan</i>) Development of Hole-Collecting Materials for p-i-n Perovskite Solar Cells
10:00 - 10:15	<u>Zeynep Gözükar Karabağ</u> (<i>The Center for Solar Energy Research and Applications (GUNAM), ODTU-GUNAM</i>) SELENIUM-RICH CONJUGATED POLYMER ADDITIVES ENABLE ENHANCED STABILITY IN PEROVSKITE SOLAR CELLS
10:15 - 10:30	<u>Byung Gi Kim</u> (<i>Laboratory of Photonics and Interfaces (LPI), École Polytechnique Fédérale de Lausanne (EPFL), CH-1015 Lausanne, Switzerland</i>) Interface and Process Engineering of Scalable FIRA-Processed Perovskite Solar Cells via Cascade Self-Assembled Monolayers
10:30 - 11:15	Coffee Break
	A1.1.2 Chair: Silver-Hamill Turren-Cruz
11:15 - 11:45	<u>Junke Wang</u> (<i>State Key Laboratory of Luminescent Materials and Devices, School of Materials Science and Engineering, South China University of Technology, Guangzhou 510640, China</i>) Br-rich perovskites for multijunction solar cells
11:45 - 12:00	<u>Marcel Roß</u> (<i>Helmholtz-Zentrum Berlin (HZB), Hahn-Meitner-Platz 1, 14109 Berlin, Germany</i>) Co-Evaporated Perovskite Absorbers for Textured Monolithic Perovskite/Silicon Tandem Solar Cells
12:00 - 12:15	<u>Zi-Fan He</u> (<i>imec, IUMAT, Thin Film PV Technology, Genk, Belgium.</i>) Nanoscale Molecular Engineering Closes the Cell-to-Module Efficiency Gap in 100 cm ² Perovskite Solar Modules
12:15 - 12:45	<u>Xinyi Shen</u> (<i>Clarendon Laboratory, Department of Physics, University of Oxford, Oxford, United Kingdom.</i>) Crystal-Facet-Directed All-Vacuum-Deposited Perovskite Solar Cells
12:45 - 13:00	<u>Sergio Reyes</u> (<i>Universidad de los Andes, Bogotá 111711, Colombia</i>) Electrochemical Processing of Inverted Perovskite Solar Cells for Improved Morphological Uniformity and Scalable Fabrication



13:00 - 13:15 Jaume Noguera-Gómez (*School of Physical and Mathematical Sciences Nanyang Technological*

A1.1.2-O4 *University, 21 Nanyang Link, Singapore 637371, Singapore)*

Engineering low-dimensional perovskites by vacuum deposition

13:15 - 15:00 **Lunch Break**

A1.1.3

Chair: Silver-Hamill Turren-Cruz

15:00 - 15:30 Siyu Yan (*Department of Physics, Clarendon Laboratory, University of Oxford, Oxford OX1 3PU, U.K)*

A1.1.3-I1 Modulating Structural and Electronic States in Vapour-Deposited Perovskite Semiconductors through Interface and Chemical Engineering

15:30 - 15:45 Zait Ayala (*Catalan Institute of Nanoscience and Nanotechnology, Campus UAB, Bellaterra, 08193*

A1.1.3-O1 *Barcelona, Spain)*

Understanding the α -phase stability of FACsPbI₃ in halide perovskite/MXene heterojunctions for Carbon based perovskite solar cells

15:45 - 16:15 Rosario Vidal (*Institute of Advanced Materials, Universitat Jaume I, Castellón, Spain)*

A1.1.3-I2 Holistic sustainability of lead-free perovskites

16:15 - 16:45 Isabella Poli (*Istituto Italiano di Tecnologia Via Morego 30, 16163 Genova, Italy)*

A1.1.3-I3 Lead-Free Perovskites for Optoelectronics

16:45 - 17:00 Omar E. Solis (*Instituto de Tecnología Química (ITQ, CSIC-UPV)*)

A1.1.3-O2 Sulfur-Based Molecular Strategies for Defect Control and Stability Enhancement in Tin Perovskite Solar Cells

17:00 - 17:10 **Closing A1**

17:15 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**



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Materials for Sustainable
Development Conference

#MATSUS26

Mallorca, Spain

26th - 30th October, 2026



October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**

MATSUS Fall 2026 Conference (MATSUSFall26)

A2 Multijunction Halide Perovskite Solar Cells: Materials, Device Design, and Advanced Characterization

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: solenn BERSON, Philip Schulz and Stefan Weber

Conference Program

October 26th - Day 1 (Monday)	
08:45 - 10:30	Plenary Session - Auditorium
October 27th - Day 2 (Tuesday)	
17:10 - 18:00	Plenary Session - Auditorium
18:00 - 19:30	Poster Session
October 28th - Day 3 (Wednesday)	
08:55 - 09:00	Opening A2 - Room 3
	Session A2.1.1 Chair: Philip Schulz
09:00 - 09:30	<u>Annalisa Bruno</u> (<i>School of Physical and Mathematical Science, Nanyang Technological University, 21 Nanyang Link, Singapore 637371Energy</i>) From Bulk to Quantum: Engineering Perovskite Optoelectronics
09:30 - 10:00	<u>Polyxeni Tsoulka</u> (<i>Univ. Grenoble Alpes, CEA, Liten, INES, 73375 Le Bourget du Lac, France</i>) Revealing the main challenges of the perovskite vapor-based deposition techniques for fully textured-Si/PK tandem solar cell applications: The case of Close Space Sublimation
10:00 - 10:15	<u>Joran de Ridder</u> (<i>Department of Physics, Clarendon Laboratory, University of Oxford, Oxford OX1 3PU, U.K</i>) Junction-Resolved Photoluminescence Imaging for All-Perovskite Multijunction Solar Cells
10:15 - 10:30	<u>Javid Hajhemati</u> (<i>Institut Photovoltaïque d'Ile-de-France (IPVF), UMR IPVF 9006, CNRS, École Polytechnique- IP Paris, Chimie Paristech-PSL, 91120 Palaiseau, France</i>) Understanding Metal Oxide/Perovskite Interface Formation for Stable and Scalable Perovskite Solar Cells
10:30 - 11:15	Coffee Break
	Session A2.1.2 Chair: Stefan Weber
11:15 - 11:45	<u>Basita Das</u> (<i>AMOLF Institute Science Park 104, Amsterdam 1098XG, Netherlands.</i>) Transforming characterization data into information in the case of perovskite solar cells
11:45 - 12:15	<u>Michele De Bastiani</u> (<i>Centre Suisse d'Electronique et de Microtechnique (CSEM), Rue Jaquet-Droz 1, 2002, Neuchâtel, Switzerland</i>) Towards Scalable, Efficient, and Durable Perovskite-Based Tandem and Triple-Junction Solar Cells
12:15 - 12:45	<u>Robert Hoyer</u> (<i>Inorganic Chemistry Laboratory, University of Oxford, UK</i>) Spatial Atomic Layer Deposition of Oxide Thin Films for Tandem Photovoltaics
12:45 - 13:15	<u>Monica Lira-Cantu</u> (<i>Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and Barcelona Institute of Science and Technology, UAB Campus, 08193 Bellaterra, Barcelona, Spain</i>) Stability of halide perovskites for single and tandem solar cells
13:15 - 15:00	Lunch Break
	Session A2.1.3 Chair: Polyxeni Tsoulka
15:00 - 15:30	<u>Kai Oliver Brinkmann</u> (<i>Institute of Electronic Devices, University of Wuppertal, Wuppertal, Germany</i>) Operation stability of non-fullerene solar cells for perovskite-organic tandems



15:30 - 15:45	<u>Oussama Er-raji</u> (<i>University of Freiburg, Department of Sustainable Systems Engineering (INATECH), Freiburg, 79110, Germany</i>)
A2.1.3-O1	Scalable Interfacial CsPbCl ₃ Layers as a Strain-Relief Strategy for Stable Perovskite/Silicon Tandem Cells
15:45 - 16:15	<u>Martin C. Schubert</u> (<i>Fraunhofer Institute for Solar Energy Systems ISE, Freiburg, 79110, Germany</i>)
A2.1.3-I2	Loss Analysis and Industrially Relevant Characterization of Perovskite-Silicon Tandem Solar Cells
16:15 - 16:45	
16:45 - 17:00	<u>Goutam Paul</u> (<i>Institute for Photovoltaics (ipv), University of Stuttgart, Pfaffenwaldring 47, 70569 Stuttgart, Germany</i>)
A2.1.3-O2	Multimodal Characterization of Reverse-Bias induced Degradation in Perovskite Solar Cells
17:00 - 17:10	Closing A2
20:00 - 22:00	Social Dinner

October 29th - Day 4 (Thursday)

17:15 - 18:00 **Plenary Session - Auditorium**

October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**



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A3 Single-Crystal Halide Perovskites: From Growth to Device Applications

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Daniela Marongiu and Makhsud Saidaminov

Conference Program

October 26th - Day 1 (Monday)

08:45 - 10:30 **Plenary Session - Auditorium**

October 27th - Day 2 (Tuesday)

17:10 - 18:00 **Plenary Session - Auditorium**

October 28th - Day 3 (Wednesday)

20:00 - 22:00 **Social Dinner**

October 29th - Day 4 (Thursday)

08:55 - 09:00 **Opening A3 - Room 4**

Session A3.1.1

Chair: Daniela Marongiu

09:00 - 09:30 Sergii Yakunin (*Institute of Inorganic Chemistry, Department of Chemistry and Applied Biosciences, ETH Zurich, 8093 Zurich, Switzerland.*)

Metal Halide Perovskite Single-Crystals from Hard Radiation Detectors to Radiovoltaic Batteries

09:30 - 10:00 Ahmed Abdelhady (*Khalifa University, Abu Dhabi, UAE*)

A3.1.1-I2 In Situ Organic Cation Chemistry for the Growth and Engineering of Halide Perovskite Single Crystals

10:00 - 10:15 Alberto García-Fernández (*CICA (Interdisciplinary Center for Chemistry and Biology), Department of Chemistry, Faculty of Science, Universidade da Coruña, As Carballeiras, s/n, Campus de Elviña 15071, A Coruña, Spain*)

Synchrotron-Based Photoelectron Spectroscopy of Halide Perovskite Single Crystals: From Clean Surfaces to Buried Interfaces

10:15 - 10:30 Beatriz Martín-García (*Materials Physics Center, CSIC-UPV/EHU, Paseo Manuel de Lardizábal 5, 20018 Donostia - San Sebastian, Spain*)

A3.1.1-O2 Magneto-Optical Coupling in Layered Hybrid Manganese Chloride Perovskites by Photoluminescence Spectroscopy

10:30 - 11:15 **Coffee Break**

Session A3.1.2

Chair: Valeria Demontis

11:15 - 11:45 Alexander Urban (*Nanospectroscopy Group, Nano-Institute Munich, Department of Physics, Ludwig-Maximilians-Universität München*)

From Individual Perovskite Nanocrystals to Predictive Structure-Property Relationships

11:45 - 12:15 Linn Leppert (*School of Metallurgy and Materials, University of Birmingham, Edgbaston B15 2TT, UK*)

A3.1.2-I2 Strain-Induced Tetragonal-to-Cubic Phase Transition from On-the-Fly Machine-Learned Potentials

12:15 - 12:45 Alessandro Mattoni (*CNR - Istituto Officina dei Materiali (IOM), Cagliari, Monserrato, 09042 CA, Italy*)

A3.1.2-I3 Molecular Dynamics Simulations of Hybrid Perovskites: Towards the Modeling of Crystal Growth and Heterostructures

12:45 - 15:00 **Lunch Break**

A3.1.3

Chair: Daniela Marongiu

15:00 - 15:30 Rosanna Mastria (*CNR NANOTEC - Istituto di Nanotecnologia, c/o Campus Ecotekne, Via Monteroni, 73100 Lecce, Italy*)

A3.1.3-I1 Engineering Metal Halide Perovskite Single Crystals for Integrated Photonics

15:30 - 15:45 Roman Krahne (*Italian Institute of Technology (IIT)*)

A3.1.3-O1 Directionality of optical properties in rectangular and smooth 2D halide perovskites microcrystals



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15:45 - 16:00 Lidia Dubenska (*ETH Zürich, Department of Chemistry and Applied Biosciences, Vladimir-Prelog-Weg 1-5, Zürich CH-8093, Switzerland*)

Noninvasive Quality Assessment of Melt-Grown Cesium Lead Bromide by Nuclear Quadrupole Resonance Spectroscopy

16:00 - 16:10 **Closing A3**

17:15 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**



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October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**

MATSUS Fall 2026 Conference (MATSUSFall26)

A4 Pathways to Stable Metal Halide Perovskites

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Helen Bristow, Oussama Er-Raji and Mostafa Othman

Conference Program

October 26th - Day 1 (Monday)	
08:45 - 10:30 Plenary Session - Auditorium	
11:10 - 11:15 Opening A4 - Room 3	
Session A4.1.1 Chair: Mostafa Othman	
11:15 - 11:45 A4.1.1-I1	<u>Nakita K. Noel</u> (<i>Clarendon Laboratory, Department of Physics, University of Oxford, Oxford, United Kingdom.</i>) Kinetic Control of Polytypism in Formamidinium Lead Halide Perovskites
11:45 - 12:00 A4.1.1-O1	<u>Chiara Ongaro</u> (<i>Photovoltaics and thin-films electronics laboratory (PV-lab), Institute of Electrical and Microengineering (IEM), Ecole Polytechnique Federale de Lausanne (EPFL), Neuchatel, 2000 Switzerland</i>) Precursor Salt Chemistry Dictates Formation And Stability Of Two-Step Wide-Bandgap Perovskites
12:00 - 12:15 A4.1.1-O2	<u>Saglain Choudhary</u> (<i>Clarendon Laboratory, Department of Physics, University of Oxford, Oxford, United Kingdom.</i>) Formation of Pure FA Mixed Halide Perovskites Through Alternative Crystallisation Pathways
12:15 - 12:30 A4.1.1-O3	<u>Jonas Diekmann</u> (<i>École Polytechnique Fédérale de Lausanne (EPFL), PVLAB</i>) Pressure-assisted annealing for phase-pure formamidinium lead iodide perovskite solar cells
12:30 - 13:00 A4.1.1-I2	<u>jacky even</u> (<i>Univ. Rennes, INSA Rennes, CNRS, Institut FOTON - UMR6082, F-35000 Rennes, France.</i>) Toward stable perovskite heterostructures for photovoltaic applications
13:00 - 15:00 Lunch Break	
Session A4.1.2 Chair: Oussama Er-Raji	
15:00 - 15:30 A4.1.2-I1	<u>Michael Saliba</u> (<i>Institute for Photovoltaics, University of Stuttgart</i>) Shedding light on wide-bandgap perovskites
15:30 - 15:45 A4.1.2-O1	<u>Ranin Barek</u> (<i>Université Grenoble Alpes, CEA Grenoble, IRIG, MEM, NRX, 17 avenue des Martyrs, 38000 Grenoble, France</i>) Sn/Ge-based Halogenated Perovskites for Photovoltaics: Synthesis, Structural Properties and Stability
15:45 - 16:15 A4.1.2-I2	<u>Benjamin Gallant</u> (<i>Helmholtz-Zentrum Berlin für Materialien und Energie</i>) Unveiling the moisture-induced surface degradation of halide perovskites at the atomic level
16:15 - 16:30 A4.1.2-O2	<u>Marta Pereira</u> (<i>LEPABE-- Laboratory for Process Engineering, Environment, Biotechnology and Energy, ALICE-Associate Laboratory in Chemical Engineering, Faculty of Engineering, University of Porto, Rua Dr. Roberto Frias, 4200-465 Porto, Portugal</i>) Atmosphere-Dependent Stability and Degradation Mechanisms in Laser-Sealed n-i-p Perovskite Solar Cells
16:30 - 17:00 A4.1.2-I3	<u>Giulia Grancini</u> (<i>Universita pavia</i>) Unlocking the Photovoltaic Potential of Low-Dimensional Perovskites through Crystallographic and Interfacial Engineering



October 27th - Day 2 (Tuesday)

Session A4.2.1

Chair: Oussama Er-Raji

09:00 - 09:30 Mathias Uller Rothmann (*Foshan Xianhu Laboratory*)

A4.2.1-11 Analytical microscopy of halide perovskite films and devices

09:30 - 10:00 Sandra Jenatsch (*Fluxim AG, Katharina-Sulzer-Platz 2, 8400 Winterthur, Switzerland*)

A4.2.1-12 Electro-Optical Characterization of Perovskite Solar Cells: From SAM Engineering to Degradation Mechanisms

10:00 - 10:15 Muhammad Ans (*Institute of Physical Chemistry, Polish Academy of Sciences, Kasprzaka 44/52, 01-224 Warsaw, Poland*)

A4.2.1-01 Meso-Crowned Porphyrin as a Dual Cavity Hybrid Macrocycle for Improving the Efficiency and Stability of Perovskite Solar Cells

10:15 - 10:30 Syedli Emami (*LEPABE-- Laboratory for Process Engineering, Environment, Biotechnology and*

A4.2.1-02 *Energy, ALICE-Associate Laboratory in Chemical Engineering, Faculty of Engineering, University of Porto, Rua Dr. Roberto Frias, 4200-465 Porto, Portugal*)

Perovskite laser power converter for in-space application

10:30 - 11:15 **Coffee Break**

Session A4.2.2

Chair: Mostafa Othman

11:15 - 11:45 Monica Morales Masis (*Materials to Optoelectronic Devices (M2D) & Institute for Complex Molecular Systems, Eindhoven University of Technology (TU/e), P.O. Box 513, 5600 MB Eindhoven, The Netherlands*)

A4.2.2-11 Transparent Conducting Oxides: A Lever for Efficiency and Stability in Perovskite-Silicon Tandem Solar Cells

11:45 - 12:15 Carolin Ulbrich (*PVcomB/ Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Schwarzschildstr.3, D-12489 Berlin, Germany.*)

A4.2.2-12 Learnings from Long-Term Outdoor Monitoring of (Lab- and Industry-scale) Perovskite-Based Solar Cells and Modules

12:15 - 15:00 **Lunch Break**

Session A4.2.3

Chair: Oussama Er-Raji

15:00 - 15:15 Erik Levin (*EDF R&D, 18 Boulevard Thomas Gobert, 91120 Palaiseau, France*)

A4.2.3-01 Multidimensional Characterization of Laser-Scribing-Induced Degradation in Perovskite Mini-Modules

15:15 - 15:45 Jarla Thiesbrummel (*Institute of Physics and Astronomy, University of Potsdam, Potsdam-Golm, Germany*)

A4.2.3-11 Mobile Ions as the Key to Performance and Stability in Perovskite Solar Cells

15:45 - 16:15 Luigi Vesce (*CHOSE - Centre for Hybrid and Organic Solar Energy, Department of Electronic Engineering, University of Rome "Tor Vergata", via del Politecnico 1, 00133, Rome, Italy*)

A4.2.3-12 Toward Stable and Scalable Carbon-Based Perovskite Solar Modules: Materials, Interfaces and Fully Wet Manufacturing

16:15 - 16:45 Randi AZMI (*School of Science and Engineering, The Chinese University of Hong Kong, Shenzhen, Guangdong, 518172, China*)

A4.2.3-13 Toward Stable and Scalable Dimensional Heterojunction Perovskite Photovoltaics

16:45 - 16:55 **Closing A4**

17:10 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**

October 28th - Day 3 (Wednesday)

20:00 - 22:00 **Social Dinner**

October 29th - Day 4 (Thursday)

17:15 - 18:00 **Plenary Session - Auditorium**

October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**

MATSUS Fall 2026 Conference (MATSUSFall26)

A5 Interface Engineering, Optical Strategies and Multijunction Designs in Perovskite Photovoltaics and Optoelectronics

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Clara Aranda Alonso, Cristina Momblona and Monika Rai

Conference Program

October 26th - Day 1 (Monday)	
08:45 - 10:30	Plenary Session - Auditorium
October 27th - Day 2 (Tuesday)	
17:10 - 18:00	Plenary Session - Auditorium
October 28th - Day 3 (Wednesday)	
20:00 - 22:00	Social Dinner
October 29th - Day 4 (Thursday)	
17:15 - 18:00	Plenary Session - Auditorium
18:00 - 19:30	Poster Session
October 30th - Day 5 (Friday)	
09:00 - 10:30	Plenary Session - Auditorium
11:10 - 11:15	Opening A5 - Room 4
	Session A5.1.1 Chair: Monika Rai
11:15 - 11:45	<u>Rene Janssen</u> (<i>Materials to Optoelectronic Devices (M2D) & Institute for Complex Molecular Systems, Eindhoven University of Technology (TU/e), P.O. Box 513, 5600 MB Eindhoven, The Netherlands</i>) Material design for multijunction perovskite solar cells – a tour along bandgaps
11:45 - 12:00	<u>HANKI KIM</u> (<i>School of Advanced Materials Science and Engineering, Sungkyunkwan University, Suwon 16419, Republic of Korea</i>) Nitrogen-Doped SnO ₂ Transparent Electrodes for High-Performance and Sustainable Perovskite Optoelectronics
12:00 - 12:30	<u>Jeremy Hieulle</u> (<i>Université de Haute Alsace (UHA), CNRS, Institut de Science des Matériaux de Mulhouse (IS2M), UMR 7361, 3b rue Alfred Werner, F-68100 Mulhouse, France</i>) Understanding and Mitigating Photo-Induced Degradation in Perovskites
12:30 - 12:45	<u>Sonia Rani</u> (<i>1Organic Nanostructured Photovoltaics, ICFO-The Institute of Photonic Sciences, The Barcelona Institute of Science and Technology, 08860, Castelldefels, Barcelona, Spain</i>) Decoupling Nanoscale Voids Filling of Self-Assembled Monolayers for Inverted Perovskite Solar Cells
12:45 - 13:15	<u>Elke Debroye</u> (<i>Department of Chemistry, KU Leuven, 3001 Leuven, Belgium</i>) Shedding Light on Perovskites: Spectroscopic Insights into Stable Optoelectronics
13:15 - 15:00	Lunch Break
	Session A5.1.2 Chair: Monika Rai
15:00 - 15:30	<u>Daniel Congreve</u> (<i>Department of Electrical Engineering, Stanford University</i>) Blue, Violet, and UV Emission from Perovskite Devices
15:30 - 15:45	<u>Eugenia Martinez-Ferrero</u> (<i>ICIQ-CERCA – Institute of Chemical Research of Catalonia, The Barcelona Institute of Science and Technology, 43007 Tarragona, Spain</i>) Tuning the Anchoring Group of Self-Assembled Molecules for Enhanced Perovskite Crystal Growth in Perovskite Solar Cells



15:45 - 16:15	<u>Mojtaba Abdi Jalebi</u> (<i>Institute for Materials Discovery, University College London, Malet Place, London WC1E 7JE, UK</i>)
A5.1.2-I2	Multi-Interface Engineering and Evolutionary Dynamics in Perovskite Photovoltaics: From Fundamental Charge Carrier Control to Scalable Devices
16:15 - 16:45	<u>Anurag Krishna</u> (<i>imec, IUMAT, Thin Film PV Technology, Genk, Belgium.</i>)
A5.1.2-I3	Molecular Engineering for Scaling Perovskite Photovoltaics from Lab to Fab
16:45 - 17:00	<u>Yunshan Wang</u> (<i>Institute for Photovoltaics (ipv) University of Stuttgart, and Research Center Jülich, Germany</i>)
A5.1.2-O2	High Precision Laser-patterned perovskite for Hybrid Photonics Photovoltaics
17:00 - 17:15	<u>Weina Zhang</u> (<i>Research Center for Advanced Science and Technology, The University of Tokyo</i>)
A5.1.2-O3	NiOx Nanoparticles Enable Ultrafast Activation of the Spiro-OMeTAD Hole Transport Layer for High-Performance and Stable Perovskite Solar Cells
17:15 - 17:25	Closing A5



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MATSUS Fall 2026 Conference (MATSUSFall26)

A6 Halide Perovskites Beyond the Ideal Crystal: Chemistry, Interfaces, and Functional Heterostructures

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Ahmed Abdelhady and Anna Moliterni

Conference Program

October 26th - Day 1 (Monday)

08:45 - 10:30 **Plenary Session - Auditorium**

October 27th - Day 2 (Tuesday)

17:10 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**

October 28th - Day 3 (Wednesday)

08:55 - 09:00 **Opening A6 - Room 4**

Session A6.1.1

Chair: Ahmed Abdelhady

09:00 - 09:30 Liberato Manna (*Nanochemistry, Istituto Italiano di Tecnologia, Genova 16163, Italy*)

A6.1.1-I1 Halide Perovskite Nanocrystals Heterostructures

09:30 - 10:00 Lina Quan (*The University of North Carolina at Chapel Hill*)

A6.1.1-I2 Optical control of polarization in 2D metal halide perovskites

10:00 - 10:30 Dmitry Baranov (*Chemical Physics and NanoLund, Department of Chemistry, Lund University, Box*

A6.1.1-I3 *124, Lund 22100, Sweden*)

Disorder, Interfaces, and Heterostructures in Perovskite Nanocrystal Superlattices

10:30 - 11:15 **Coffee Break**

Session A6.1.2

Chair: Anna Moliterni

11:15 - 11:45 Laura Herz (*Department of Physics, Clarendon Laboratory, University of Oxford, Oxford OX1 3PU, U.K*)

A6.1.2-I1 Optical probes of 2D perovskites and perovskite-inspired semiconductors

11:45 - 12:00 Alexander Schleusener (*Italian Institute of Technology (IIT), Via Morego 30, 16163 Genoa, Italy*)

A6.1.2-O1 Sequential Recrystallization for the Design of Two-Dimensional Layered Perovskite Heterostructures

12:00 - 12:15 Mahdi Malekshahi (*Institute for Photovoltaics (ipv), University of Stuttgart, Germany*)

A6.1.2-O2 Effective Solvent-engineered All-inorganic CsPbI₂Br Perovskite Solar cells

12:15 - 12:30 Esther Yi-Hang Hung (*MAX IV lab, Lund University, Sweden*)

A6.1.2-O3 Probing local chemical evolution during in situ perovskite crystallization via simultaneous X-ray absorption spectroscopy, X-ray fluorescence and X-ray diffraction

12:30 - 13:00 Davide Altamura (*Istituto di Cristallografia, Consiglio Nazionale delle Ricerche, via Amendola 122/O, 70126 Bari, Italy*)

Perovskites in the Light of X-Rays at the Home Laboratory

13:00 - 15:00 **Lunch Break**

Session 1.3

Chair: Laura Herz

15:00 - 15:30 Marina Leite (*University of California, Davis, USA*)

1.3-I1 Uncovering Stability in Halide Perovskites: an AI-Driven Approach

15:30 - 15:45 Samuele Mattioni (*CIC nanoGUNE BRTA, Tolosa Hiribidea, 76, Donostia-San Sebastián 20018, Spain*)

1.3-O1 Modulation of Magnetic Behavior in Layered Hybrid Metal Chloride Perovskites via Transition Metal Doping



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15:45 - 16:15	<u>Mohammad Reza Golobostanfard</u> (<i>aSmart Energy Materials, Department of Chemistry, University of Turku, 20500, Turku, Finland</i>)
1.3-I2	Lead-Free Two-Dimensional Halide Double Perovskites for Memristive and Neuromorphic In-Memory Computing
16:15 - 16:45	<u>Nripan Mathews</u> (<i>School of Materials Science and Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798</i>)
1.3-I3	Utilising ionic effects in halide perovskites
16:45 - 17:00	<u>Ignatio Glory Adi Winning</u> (<i>School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore, 637371 Singapore</i>)
1.3-O2	Blue Emission Engineering in Rb-Doped CsPbBr ₃ / TPBi Heterostructures: A Combined Experimental and DFT Study
17:00 - 17:10	Closing A6
20:00 - 22:00	Social Dinner



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October 29th - Day 4 (Thursday)

17:15 - 18:00 **Plenary Session - Auditorium**

October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**



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B1 Fundamentals and Emerging Phenomena in Halide Perovskites

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Sascha Feldmann, Paulina Plochocka and Alexander Urban

Conference Program

October 26th - Day 1 (Monday)

08:45 - 10:30 **Plenary Session - Auditorium**

October 27th - Day 2 (Tuesday)

17:10 - 18:00 **Plenary Session - Auditorium**

October 28th - Day 3 (Wednesday)

08:55 - 09:00 **Opening B1 - Room 2**

Session B1.1.1

Chair: Paulina Plochocka

09:00 - 09:30 David Egger (*Physics Department, TUM School of Natural Sciences, Technical University of Munich, Germany*)

B1.1.1-11 Finite-Temperature Charge Transport in Dynamically Disordered Halide Perovskites

09:30 - 10:00 Barry Rand (*Department of Electrical and Computer Engineering, Princeton University, Princeton, NJ 08544, United States*)

B1.1.1-12 The Price of Defect Tolerance? Chemical Reactivity in Halide Perovskites

10:00 - 10:30 Shuxia Tao (*Intelligent Materials Theory, Department of Applied Physics, Eindhoven University of Technology, The Netherlands*)

B1.1.1-13 From Lattice Fluctuations to Ion Migration: The Dynamics of Halide Perovskites from Machine Learning Potential

10:30 - 11:15 **Coffee Break**

Session B1.1.2

Chair: Alexey Chernikov

11:15 - 11:45 Maksym Kovalenko (*ETH Zurich, Laboratory of Inorganic Chemistry, Department of Chemistry & Applied Biosciences, Vladimir-Prelog-Weg, 1, Zürich, CH*)

B1.1.2-11 Quantum light sources using colloidal perovskite quantum dots: a research update

11:45 - 12:00 Shenyu Nie (*Department of Chemical Engineering & Biotechnology, University of Cambridge, Philippa Fawcett Dr, Cambridge CB3 0AS*)

B1.1.2-01 Perovskite nanocrystals for optical wireless communication

12:00 - 12:15 Julia Anthea Gessner (*University of Heidelberg*)

B1.1.2-02 Interplay of Coherence and Material Order in Spin and Charge Transport

12:15 - 12:30 Sudipta Seth (*Department of Chemistry, KU Leuven, 3001 Leuven, Belgium*)

B1.1.2-03 From Anti-bunching to Bunching: Collective Photon Statistics in CsPbBr₃ Quantum Dot Superlattices at Room Temperature

12:30 - 13:00 Matthew Beard (*The National Laboratory of the Rockies*)

B1.1.2-12 THz light emission via Inverse Chiral Induced Spin Selectivity in Chiral Perovskite

13:00 - 15:00 **Lunch Break**

Session B1.1.3

Chair: Mateusz Dyksik

15:00 - 15:30 Zachary VanOrman (*Hope College*)

B1.1.3-11 Toward Lead-Free Halide Perovskites for Optoelectronic Applications

15:30 - 15:45 Jan Kudrawiec (*Institute of Low Temperature and Structure Research, Polish Academy of Sciences, PL*)

B1.1.3-01 Temperature evolution of the band gap and its correlation with emission in perovskite crystals

15:45 - 16:00 Shi Wei Yuan (*AMOLF Institute Science Park 104, Amsterdam 1098XG, Netherlands.*)

B1.1.3-02 Dynamic Photoluminescence in Low-Doped Halide Perovskites

20:00 - 22:00 **Social Dinner**



October 29th - Day 4 (Thursday)

Session B1.2.1

Chair: Alexander Urban

09:00 - 09:30 Milad Abolhasani (*North Carolina State University, Department of Chemical and Biomolecular Engineering*)

B1.2.1-I1 Self-Driving Laboratories for Mapping Emerging Phenomena in Halide Perovskite Nanomaterials

09:30 - 10:00 Mateusz Dyksik (*Wroclaw University of Science and Technology*)

B1.2.1-I2 Hybrid phonons and polarons in 2D layered perovskites

10:00 - 10:30 Linn Leppert (*School of Metallurgy and Materials, University of Birmingham, Edgbaston B15 2TT, UK*)

B1.2.1-I3 Excitons and Lattice Dynamics in Halide Perovskites from First Principles

10:30 - 11:15 **Coffee Break**

B1.2.2

Chair: Sascha Feldmann

11:15 - 11:45 Roc Matheu (*Departament de Química Inorgànica i Orgànica, Institut de Química Teòrica i Computacional, Universitat de Barcelona, Barcelona, 08028, Catalunya, Spain*)

B1.2.2-I1 Charge reservoirs in expanded halide perovskite analogs at ambient and at high pressure.

11:45 - 12:15 Monica Morales-Masis (*Eindhoven University of Technology (TU/e) (NL)*)

B1.2.2-I2 Transparent Conducting Oxides: A Lever for Efficiency and Stability in Perovskite-Silicon Tandem Solar Cells

12:15 - 12:30 Tejmani Behera (*Molecular Imaging and Photonics, KU Leuven, Belgium*)

B1.2.2-O1 Spatially Resolved Self-Healing Dynamics in Perovskite-Charge Transport Layer Heterostructures

12:30 - 12:45 Ruoyu Gao (*Department of Chemistry and Centre for Processable Electronics, Imperial College London, London, London W12 0BZ, United Kingdom*)

B1.2.2-O2 Ultrafast Electrical Charge Injection in Operating Perovskite Light-Emitting Diodes Via Infrared Optical Control

12:45 - 12:55 **Closing B1**

17:15 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**



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October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**



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MATSUS Fall 2026 Conference (MATSUSFall26)

B2 Ionic Dynamics and Transport Phenomena in Metal Halide Perovskites

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Silvia Colella, Sofia Masi and Pablo P. Boix

Conference Program

October 26th - Day 1 (Monday)

08:45 - 10:30 **Plenary Session - Auditorium**

11:10 - 11:15 **Opening B2 - Room 2**

Session B2.1.1

Chair: Pablo P. Boix

11:15 - 11:45 Wolfgang Tress (ZHAW - Institute of Computational Physics, 8401 Winterthur, Switzerland)

B2.1.1-I1 Ionic Conductivity in Perovskite Solar Cells

11:45 - 12:00 Athira Shaji (LMPV-Sustainable Energy Materials Department, AMOLF, Science Park 104, Amsterdam

B2.1.1-O1 1098 XG, The Netherlands)

Correlating Optical and Electrical Frequency-Domain Responses in Halide Perovskites

12:00 - 12:15 Nick Schipper (Materials to Optoelectronic Devices (M2D) & Institute for Complex Molecular Systems,

B2.1.1-O2 Eindhoven University of Technology (TU/e), P.O. Box 513, 5600 MB Eindhoven, The Netherlands)

Probing Ionic Perturbations through Controlled Surface- and Bulk-Induced Stoichiometric Disruption in Wide-Bandgap Perovskite Solar Cells

12:15 - 12:45 Chris Dreessen (Forschungszentrum Jülich GmbH, DE)

B2.1.1-I2 Electrostatics, Photodoping, and Ionic Field Screening in Perovskite Solar Cells

12:45 - 13:00 Francesco Le Pera (AMOLF Institute Science Park 104, Amsterdam 1098XG, Netherlands.)

B2.1.1-O3 Understanding and Quantification of Ion Migration in Perovskite Solar Cells

13:00 - 15:00 **Lunch Break**

Session B2.1.2

Chair: Silvia Colella

15:00 - 15:30 Laura Basirico (National Institute for Nuclear Physics (INFN), Bologna section, Italy)

B2.1.2-I1 Defect-Mediated Charge Dynamics in Low-Dimensional Metal Halide Perovskites for Stable Radiation Detection

15:30 - 15:45 Shyantana Dasgupta (Center for Physical Sciences and Technology (FTMC), Saulėtekio al. 3, LT-10257

B2.1.2-O1 Vilnius, Lithuania)

Bulk and interfacial ion dynamics in quasi-2D and 3D perovskite LEDs.

15:45 - 16:15 Jarla Thiesbrummel (Institute of Physics and Astronomy, University of Potsdam, Potsdam-Golm,

B2.1.2-I2 Germany)

Beyond 1D: How Lateral Ion Migration Impacts Ion Densities and Stability in Perovskite Solar Cells

16:15 - 16:45 Teresa Gatti (Department of Applied Science and Technology, Politecnico di Torino, Corso Duca degli

B2.1.2-I3 Abruzzi, 24, 10129 Turin, Italy)

Heavy pnictogens-based perovskite inspired semiconductors for sustainable light-harvesting applications

16:45 - 17:00 Pablo F. Betancur (Instituto de Ciencia de los Materiales de la Universidad de Valencia (ICMUV),

B2.1.2-O2 46980, Paterna, València Spain)

Inducing Tunable Volatile Analog Switching in Nanocomposite-based MAPbBr₃ Perovskite Memristors for Synaptic Emulation

17:00 - 17:15 Paria Forozi Sowmeeh (Institute of Physics and Astronomy, University of Potsdam, Potsdam-Golm,

B2.1.2-O3 Germany)

Impact of Composition and Temperature on Ionic Degradation and Recovery in Perovskite Solar Cells

17:15 - 17:45 Filippo De Angelis (Computational Laboratory for Hybrid/Organic Photovoltaics (CLHYO), Istituto CNR di Scienze e Tecnologie Chimiche "Giulio Natta" (CNR-SCITEC), Via Elce di Sotto 8, 06123 Perugia,

B2.1.2-I4 Italy.)

Controlling Defect-Induced Degradation in Perovskite Solar Cells



October 27th - Day 2 (Tuesday)

Session B2.2.1

Chair: Sofia Masi

- 09:00 - 09:30 **B2.2.1-11** Sandy Sanchez Alonso (*Laboratory of Photonics and Interfaces (LPI), École Polytechnique Fédérale de Lausanne (EPFL), CH-1015 Lausanne, Switzerland*)
Flash Infrared Annealing as a Sub-Second Route to Control Vacancy-Related Ionic Landscapes in FAPbI₃ Perovskite Films
- 09:30 - 09:45 **B2.2.1-01** Katarzyna Pydzińska-Białek (*Helmholtz-Zentrum Berlin für Materialien und Energie*)
Impact of Blade-Coated Al₂O₃ Nanoparticles on Ionic and Electronic Dynamics in Inverted Perovskite Solar Cells
- 09:45 - 10:00 **B2.2.1-02** Linde van de Ven (*AMOLF Institute Science Park 104, Amsterdam 1098XG, Netherlands.*)
Low Doping of Tin in Lead Halide Perovskites
- 10:00 - 10:30 **B2.2.1-12** Agustin Alvarez (*AMOLF, Science Park 104, Amsterdam, The Netherlands*)
Identifying the Origin of Processes in Perovskite Devices with Electrical and Optical Modulation Techniques
- 10:30 - 11:15 **Coffee Break**

Session B2.2.2

Chair: Pablo P. Boix

- 11:15 - 11:45 **B2.2.2-11** Juan Bisquert (*Instituto de Tecnología Química, Universitat Politècnica de València - Consejo Superior de Investigaciones Científicas (UPV-CSIC), Avd. dels Tarongers s/n, València 46022, Spain*)
Dynamic Signatures of Ionic-Electronic Coupling and Degradation in Perovskite Solar Cells: Insights from Impedance and Transient Analyses
- 11:45 - 12:00 **B2.2.2-01** Tejmani Behera (*Molecular Imaging and Photonics, KU Leuven, Belgium*)
Spatially Resolved Self-Healing Dynamics in Perovskite-Charge Transport Layer Heterostructures
- 12:00 - 12:15 **B2.2.2-02** Sudipta Seth (*Department of Chemistry, KU Leuven, 3001 Leuven, Belgium*)
Operando Imaging and Locally Resolved Carrier Dynamics of Perovskite Optoelectronic Devices
- 12:15 - 12:30 **B2.2.2-03** Ulysse Teisson (*Grenoble Alpes University, CEA, LITEN, DTNM, F38000 Grenoble, France*)
Lead Halide Perovskite for medical X-ray imaging: environmental effects on chemical and electrical properties of CsPbBr₃ detectors.
- 12:30 - 12:45 **B2.2.2-04** Marcel Kouwenhoven (*AMOLF Institute Science Park 104, Amsterdam 1098XG, Netherlands.*)
Reconfigurable Multistate Optical Memory in Mixed Halide Perovskites
- 12:45 - 13:00 **B2.2.2-05** Faegheh Esmaeili (*Politecnico di Bari*)
Tailoring the NiOx/MeO-2PACz Interface via Molecular Post-Treatments for Perovskite Solar Cell
- 13:00 - 13:05 **B2.2.2-S1** Elisa Collado Fregoso (*Wiley Advanced*)
Publishing impactful research at the Advanced portfolio

13:05 - 13:15 **Closing B2**

17:10 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**

October 28th - Day 3 (Wednesday)

20:00 - 22:00 **Social Dinner**

October 29th - Day 4 (Thursday)

17:15 - 18:00 **Plenary Session - Auditorium**

October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**



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B3 Chirality in Optoelectronics: Approaches, Challenges, and Opportunities

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Dmitry Baranov, Beatriz Martin Garcia and Agustín Mihi

Conference Program

October 26th - Day 1 (Monday)

08:45 - 10:30 **Plenary Session - Auditorium**

October 27th - Day 2 (Tuesday)

17:10 - 18:00 **Plenary Session - Auditorium**

October 28th - Day 3 (Wednesday)

20:00 - 22:00 **Social Dinner**

October 29th - Day 4 (Thursday)

14:55 - 15:00 **Opening B3 -Room 2**

Session B3.1.2

Chair: Agustín Mihi

15:00 - 15:30 Giulia Grancini (*University di Pavia*)

B3.1.2-11 Beyond Passivation: Ferroelectric Low-Dimensional Perovskites for Stable and Efficient Photovoltaics

15:30 - 16:00 Sascha Feldmann (*Laboratory for Energy Materials, École Polytechnique Fédérale de Lausanne (EPFL),*

B3.1.2-12 *Rue de l'Industrie 17, 1951 Sion, Switzerland*)

Chiroptical probes to track spin & light polarization in space & time

16:00 - 16:30 Shuxia Tao (*Intelligent Materials Theory, Department of Applied Physics, Eindhoven University of*

B3.1.2-13 *Technology, The Netherlands*)

Twisting Light and Spin in Chiral Halide Perovskites

16:30 - 17:00 Henk Bolink (*Institute of Molecular Science (ICMOL), University of Valencia, C/ Catedrático José*

B3.1.2-14 *Beltrán, 2, 46980, Paterna, Valencia, Spain.*)

Incorporation of nanophotonic structures in OLEDs to generate circularly polarized light.

17:00 - 17:30 Li Wan (*Max Planck Institute of Microstructure Physics, 06120 Halle, Germany*)

B3.1.2-15 Induced Chirality and Orbital Texture in Organic Semiconductor Optoelectronics

17:15 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**



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October 30th - Day 5 (Friday)

09:00 - 10:30 Plenary Session - Auditorium

Session B3.2.1

Chair: Dmitry Baranov

11:15 - 11:45 Francesco Furlan (*Department of Materials and Centre for Processable Electronics, Imperial College London, London, W12 0BZ, UK*)

B3.2.1-I1

Chiral conjugated systems for circularly polarised light-emitting diodes

11:45 - 12:00 Jose Mendoza Carreño (*Institut de Ciència de Materials de Barcelona (ICMAB), CSIC, Campus Bellaterra, 08193 Barcelona, Spain*)

B3.2.1-O1

Chiral nanoimprinted photonic arrays for efficient circularly polarized emission applications

12:00 - 12:15 Sachin Mishra (*Materials Interfaces and Colloid Engineering Group (INTERCOLL), Department of Materials Science & Engineering, Universitat Politècnica de Catalunya (UPC), Carrer de Colom 11, 08222 Terrassa, Barcelona, Spain*)

B3.2.1-O2

Chiral Assemblies Of Colloidal Liquid Crystals Based On Modified Cellulose Nanomaterials

12:15 - 15:00 Lunch Break

Session B3.2.2

Chair: Beatriz Martin Garcia

15:00 - 15:30 Rosario Vidal (*Institute of Advanced Materials, Universitat Jaume I, Castellón, Spain*)

B3.2.2-I1

Preliminary Results on the Sustainability of Chiral Perovskite Optoelectronic Materials

15:30 - 16:00 Maria Vasilopoulou (*National Center for Scientific Research Demokritos*)

B3.2.2-I2

Building Landau staircase of facets for room temperature superradiant lasers.

16:00 - 16:30 Angela Wittmann (*JGU Mainz*)

B3.2.2-I3

Chirality-induced unidirectionality

16:30 - 16:45 Subarna Samanta (*CINBIO, Universidade de Vigo, Materials Chemistry and Physics Group,*

B3.2.2-O1

Department of Physical Chemistry, Campus Universitario Lagoas, Marcosende, Vigo 36310, Spain.)
A Green Approach to Perovskite Nanocrystal Synthesis through Solvent Recycling.

16:45 - 16:55 Closing B3



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B4 Fundamental Understanding of Halide Perovskite Materials, Interfaces and Devices

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Krishanu Dey and Sudipta Seth

Conference Program

October 26th - Day 1 (Monday)

08:45 - 10:30 **Plenary Session - Auditorium**

11:10 - 11:15 **Opening B4 - Room 1**

Session B4.1.1

Chair: Sudipta Seth

11:15 - 11:45 Laura Herz (*Clarendon Laboratory, Department of Physics, University of Oxford, Parks Road, Oxford OX1 3PU, UK*)

Multimodal probes of halide segregation in mixed-halide perovskites

11:45 - 12:00 Ya-Ru Wang (*Max Planck Institute for Solid State Research, Stuttgart, Germany.*)

B4.1.1-O1 Photo de-mixing and ion transport in two-dimensional Dion-Jacobson mixed halide perovskites

12:00 - 12:15 Szymon Zelewski (*Department of Experimental Physics, Faculty of Fundamental Problems of Technology, Wrocław University of Science and Technology, Wybrzeże S. Wyspiańskiego 27, 50-370 Wrocław, Poland*)

B4.1.1-O2 Revealing the Energetic Disorder in Emerging Optoelectronic Materials by Photothermal Spectroscopy

12:15 - 12:30 Milos Milos (*University of Cambridge*)

B4.1.1-O3 Heterogeneity in lead halide perovskites across spatial and temporal length scales

12:30 - 13:00 Julia Wiktor (*Department of Physics and Astronomy, Chalmers University of Technology, Sweden*)

B4.1.1-I2 Structural Dynamics and Charge Localization in Halide Perovskites: Connecting Atomistic Modeling with Experiment

13:00 - 15:00 **Break**

Session B4.1.2

Chair: Laura Herz

15:00 - 15:30 Philip Schulz (*Institut Photovoltaïque d'Ile-de-France (IPVF), UMR IPVF 9006, CNRS, École Polytechnique- IP Paris, Chimie Paristech-PSL, 91120 Palaiseau, France*)

B4.1.2-I1 Interface Analytics in Halide Perovskites: From Buried Chemistry to Device Functionality

15:30 - 15:45 Juhyeon Kim (*Department of Physics Chemistry and Biology (IFM) Linköping University, Linköping 58183, Sweden*)

B4.1.2-O1 Surface p-Doping via Thiophene-Containing Polymers for High-Performance Quasi-2D Tin Perovskite Transistors

15:45 - 16:15 Pablo P Boix (*Instituto de Tecnología Química (ITQ), Consejo Superior de Investigaciones Científicas- Universitat Politècnica de València, 46022, Valencia, Spain*)

B4.1.2-I2 Engineering Chemical Dynamics in Halide Perovskite Devices, From Liability to Design Principle

16:15 - 16:45 Wolfgang Tress (*ZHAW - Institute of Computational Physics, 8401 Winterthur, Switzerland*)

B4.1.2-I3 Perovskite Memristors and Their Integration into Solar Cells

16:45 - 17:00 Fatemeh Behrouznejad (*CHOSE—Centre for Hybrid and Organic Solar Energy, University of Rome Tor Vergata, Via del Politecnico 1, 00133 Rome, Italy*)

B4.1.2-O2 Indoor perovskite solar cells: impact of LED spectrum, illuminance, and measurement accuracy on photovoltaic performance



October 27th - Day 2 (Tuesday)

Session B4.2.1

Chair: Sudipta Seth

09:00 - 09:30 Maksym Kovalenko (*ETH Zurich, Laboratory of Inorganic Chemistry, Department of Chemistry & Applied Biosciences*)

Single Perovskite Quantum Dots as Room-Temperature Quantum Emitters and Photochemical Reporters

09:30 - 09:45 Shaoni Kar (*Clarendon Laboratory, Department of Physics, University of Oxford, Parks Road, Oxford OX1 3PU, United Kingdom*)

Thermally Evaporated All-Inorganic Perovskites for Pure-Red Light Emitting Diodes

09:45 - 10:00 Chinmay Barman (*Ultrafast Photophysics and Photonics Laboratory, Department of Physics, Indian Institute of Technology Hyderabad, Kandi 502285, Telangana, India*)

Operando Investigation of Carrier Dynamics in 2D Inorganic Ruddlesden-Popper Mixed-Halide Perovskite Photodetector Device

10:00 - 10:30 Johan Hofkens (*MPIP Mainz, Germany*)

B4.2.1-I2 FROM BLINKING OF SINGLE MOLECULES TO LOOKING IN PEROVSKITE-BASED DEVICES

10:30 - 11:15 **Coffee Break**

Session B4.2.2

Chair: Paola Vivo

11:15 - 11:45 Marina Leite (*University of California, Davis, USA*)

B4.2.2-I1 Photoswitchability and Photostriction with Inorganic Halide Perovskites

11:45 - 12:15 Ivan Scheblykin (*Chemical Physics and NanoLund, Lund University, P.O. Box 124, 22100 Lund, Sweden*)

Photo-Induced Memory Effects in Perovskite Photoluminescence and Their Applications in Computing

12:15 - 12:30 Jitendra Kumar (*Instituto de Tecnología Química (ITQ), Consejo Superior de Investigaciones Científicas-Universitat Politècnica de València, 46022, Valencia, Spain*)

Disentangling Shallow, Deep, and Auger-Assisted Trapping in Triple-Cation Perovskites

12:30 - 12:45 Sudeshna Ghosh (*Instituto de Tecnología Química (ITQ), Consejo Superior de Investigaciones Científicas-Universitat Politècnica de València (CSIC-UPV), Valencia, Spain*)

Comparative Study of SnO₂ Architectures for Improved Interfacial Dynamics and Hysteresis-free Perovskite Solar Cells

12:45 - 13:15 Satyaprasad Senanayak (*Nanoelectronics and Device Physics Lab, School of Physical Sciences, National Institute of Science Education and Research, Bhubaneswar, Odisha, India, 752050*)

Strategies for operationally stable perovskite field effect transistor

13:15 - 15:00 **Break**

Session B4.2.3

Chair: Pablo P. Boix

15:00 - 15:30 Paulina Plochocka (*Laboratoire National des Champs Magnetiques Intenses, CNRS-UJF-UPS-INSA, Toulouse, France*)

Revisiting the Optical Response of Two-Dimensional Perovskites: Beyond Excitons

15:30 - 16:00 Paola Vivo (*Hybrid Solar Cells, Faculty of Engineering and Natural Sciences, Tampere University, P.O. Box 541, Tampere FI-33720, Finland*)

From Defects and Disorder to Function in Lead-Free Perovskite-Inspired Semiconductors

16:00 - 16:15 Robert Kudrawiec (*Department of Semiconductor Materials Engineering, Wrocław University of Science and Technology, Wybrzeże Wyspiańskiego 27, 50-370 Wrocław, Poland*)

Activation energy of self-trapped excitons and near-band emission under various hydrostatic pressure

16:15 - 16:25 **Closing B4**

17:10 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**

October 28th - Day 3 (Wednesday)

20:00 - 22:00 **Social Dinner**

October 29th - Day 4 (Thursday)

17:15 - 18:00 **Plenary Session - Auditorium**

October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**



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B5 Structure and Dynamics in Halide Perovskites: From Theory and Spectroscopy to Applications

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Milos Dubajic, Aaron Lindenberg and Aron Walsh

Conference Program

October 26th - Day 1 (Monday)

08:45 - 10:30 **Plenary Session - Auditorium**

October 27th - Day 2 (Tuesday)

17:10 - 18:00 **Plenary Session - Auditorium**

October 28th - Day 3 (Wednesday)

20:00 - 22:00 **Social Dinner**

October 29th - Day 4 (Thursday)

08:55 - 09:00 **Opening B5 - Room 1**

Session B5.1.1

Chair: Milos Dubajic

09:00 - 09:30 Michael Toney (*Department of Materials Science and Engineering, University of Colorado Boulder, Boulder, CO 80309, USA*)

Understanding dynamic local structure in Hybrid Metal Halide Perovskites

09:30 - 09:45 Alejandro R. Goñi (*Institut de Ciència de Materials de Barcelona (ICMAB), CSIC, Campus Bellaterra, 08193 Barcelona, Spain*)

Origin of the Temperature-Induced Gap Bowing of FxMA1-xPbI3 Perovskites: Role of Cationic Rattlers

09:45 - 10:00 Jiaxing Du (*Department of Physics, University of Oxford, Clarendon Laboratory, Parks Road, Oxford, OX1 3PU, United Kingdom*)

Inter-Layer Excitation Diffusion and Odd-Even Transport Anisotropy in 2D Perovskites Revealed by Photoluminescence Reabsorption

10:00 - 10:30 Julian Steele (*School of Mathematics and Physics, The University of Queensland, Brisbane, QLD, 4072, Australia*)

Microscopic Phonons to Macroscopic Properties

10:30 - 11:15 **Coffee Break**

Session B5.1.2

Chair: Dmitry Baranov

11:15 - 11:45 David Egger (*Physics Department, TUM School of Natural Sciences, Technical University of Munich, Germany*)

From Anharmonic Lattices to Predictive Machine-Learning Models of Halide Perovskites

11:45 - 12:00 Jasurbek Gulomov (*Université Paris-Saclay, CEA, Service de recherche en Corrosion et Comportement des Matériaux, SRMP, Gif sur Yvette, 91191, France*)

Effect of Local Disorder on the Surface Stability and Electronic Properties of Inorganic Halide Perovskites

12:00 - 12:15 Capucine Mamak (*Department of Chemical Engineering and Biotechnology, University of Cambridge, CB3 0AS, UK*)

Investigating the impact of in-situ mechanical strain on the structural and optical properties of CsPbBr3

12:15 - 12:30 Larissa van de Ven (*Zernike Institute for Advanced Materials, University of Groningen, Nijenborgh 3, Groningen 9747AG, The Netherlands*)

Probing Pb-Sn Mixing, Clustering, and Ordering in All-Inorganic Tin-Lead Perovskites

12:30 - 13:00 Peijun Guo (*Department of Chemical and Environmental Engineering, Yale University, USA*)

Tracking and making use of heat in two-dimensional metal halide perovskites



13:00 - 15:00 **Lunch Break**

Session B5.1.3

Chair: Klara Suchan

15:00 - 15:30 Lina Quan (*University of North Carolina at Chapel Hill, Department of Chemistry*)

B5.1.3-I1 Ultrafast spin and phonon transduction in chiral Hybrid Perovskites

15:30 - 16:00 Patanjali Kambhampati (*Department of Chemistry, McGill University, Montreal, Canada.*)

B5.1.3-I2 Birth of a Landau Polaron in Real Time and Its Quantum-Optical Consequences in Perovskite Quantum Dots

16:00 - 16:30 Paul Erhart (*Department of Physics and Astronomy, Chalmers University of Technology, Sweden*)

B5.1.3-I3 Tuning Soft Perovskites by Alloying: Phase Boundaries, Halide Ordering, and Vacancy Migration

17:15 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**



October 30th - Day 5 (Friday)

09:00 - 10:30 Plenary Session - Auditorium

Session B5.2.1

Chair: Mathias Uller Rothmann

11:15 - 11:45 jacky even (*Université de Rennes, INSA Rennes, CNRS, Institut FOTON - UMR 6082, F-35000 Rennes, France*)

Stability and optoelectronic properties of bulk halide perovskites and their heterostructures: theoretical approaches to polymorphism and lattice matching

11:45 - 12:00 Mirosław Maczka (*Institute of Low Temperature and Structure Research, Polish Academy of Science*)
B5.2.1-O1 Structural, optical and electrical properties of mixed-cation lead halides

12:00 - 12:15 Jon Lafuente-Bartolome (*Department of Physics, University of the Basque Country (EHU), 48940 Leioa, Basque Country, Spain*)

B5.2.1-O2 Topological polarons in halide perovskites

12:15 - 12:45 Zhanybek Alpichshev (*Institute of Science and Technology Austria*)

B5.2.1-I2 Flexoelectric domain walls enable charge separation and transport in cubic perovskites

12:45 - 15:00 Lunch Break

Session B5.2.2

Chair: Milos Dubajic

15:00 - 15:30 Marios Zacharias (*Computation-based Science and Technology Research Center, The Cyprus Institute, Aglantzia 2121, Nicosia, Cyprus*)

Beyond the Average Crystal: Local Disorder, Anharmonicity, and Electron-Phonon Coupling in Halide Perovskites

15:30 - 15:45 Ethan Berger (*Department of Physics and Astronomy, Chalmers University of Technology, Sweden*)
B5.2.2-O1 Unifying Low-Frequency Raman and Infrared Signatures across Perovskites

15:45 - 16:00 Konstantina Kalliopi Armadorou (*Department of Chemical Engineering & Biotechnology, University of Cambridge, Philippa Fawcett drive, Cambridge CB3 0AS, UK*)

B5.2.2-O2 Physics-Informed Machine Learning for Parameter Extraction from Multimodal Transient Spectroscopy of Perovskite Solar Cells

16:00 - 16:10 Closing B5

MATSUS Fall 2026 Conference (MATSUSFall26)

C1 Multiscale Insights into Solid-Liquid Interfaces for Sustainable Energy Technologies

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Marco Fontana, Elena Magnano, Silvia Nappini and Francesca Risplendi

Conference Program

October 26th - Day 1 (Monday)	
08:45 - 10:30 Plenary Session - Auditorium	
October 27th - Day 2 (Tuesday)	
14:55 - 15:00 Opening C1 - Room 12	
	Session C1.1.1 Chair: Elena Magnano
15:00 - 15:30	Beatriz Roldan Cuenya (<i>Department of Interface Science, Fritz Haber Institute of the Max Planck Society, 14195 Berlin, Germany</i>) Watching Electrocatalysts Adapt: Operando X-ray and Vibrational Spectroscopies and In Situ Microscopy for Understanding Catalyst Dynamics
15:30 - 15:45	Avner Rothschild (<i>Department of Materials Science and Engineering, Technion - Israel Institute of Technology, Haifa, Israel</i>) Operando Optical Imaging Reveals Phase Front Dynamics in Charging Nickel Hydroxide Thin-Film Electrodes
15:45 - 16:00	Angela Rittsteuer (<i>Computational Materials Physics, Faculty of Physics, University of Vienna</i>) Simulating Charged Electrode-Water Interfaces with Solvated Atoms: A DFT-Trained, ML-Accelerated Molecular Dynamics Workflow
17:10 - 18:00	Plenary Session - Auditorium
18:00 - 19:30	Poster Session



October 28th - Day 3 (Wednesday)

Session C1.2.1

Chair: Luca D'Amario

09:00 - 09:30 Simone Piccinin (CNR - Istituto Officina dei Materiali, Trieste, Italy)

C1.2.1-11 Photoelectrochemical water splitting on hematite: Mechanistic insights from machine-learning-interatomic-potentials MD and microkinetic modeling

09:30 - 10:00 Isabella Concina (Lulea University of Technology)

C1.2.1-13 Engineering Semiconductor-Electrolyte Interfaces for Water Splitting: Opportunities and Challenges

10:00 - 10:30 Jordi Arbiol (Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and BIST, Campus

C1.2.1-12 UAB, Bellaterra, 08193 Barcelona, Catalonia, Spain)

In-situ STEM for Energy and Catalysis Nanomaterials

10:30 - 11:15 **Coffee Break**

Session C1.2.2

Chair: Marco Fontana

11:15 - 11:45 Vasiliki Tileli (Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland)

C1.2.2-11 Quasi-Operando Electron Microscopy of Electrocatalysts

11:45 - 12:00 Angelica Chiodoni (Center for Sustainable Future Technologies - CSFT@POLITO, Istituto Italiano di

C1.2.2-01 Tecnologia, Via Livorno, 60, 10144 Torino TO, Italy)

Operando correlative characterization of electrocatalysts for CO₂ reduction reaction

12:00 - 12:30 Andreas Hutzler (Helmholtz Institute Erlangen-Nürnberg for Renewable Energy (HIERN),

C1.2.2-13 Forschungszentrum Jülich GmbH, 91058 Erlangen, Germany)

From Nanoscale Dynamics to Macroscopic Electrochemistry: Quantitative Operando Liquid-Phase Electron Microscopy for Decoding Electrode Degradation

12:30 - 13:00 Andrea Marchionni (CNR - Istituto di Chimica dei Composti Organometallici (CNR-ICCOM))

C1.2.2-12 Electrocatalysis beyond the metallic state: the key role of dynamic oxide layers in Pt- and Pd-based systems

13:00 - 13:15 Katsushi Fujii (RIKEN Center for Advanced Photonics)

C1.2.2-02 Effect of Cathode and Anode Catalyst Ink Ratio Affecting on Current Density in Membrane Electrode Assemblies (MEA) for Polymer Electrolyte Membrane Water Electrolysis (PEMWE)

13:15 - 13:30 Ilargi Napal Azcona (Elettra-Sincrotrone Trieste, Strada Statale 14 km 163,5 in Area Science Park,

C1.2.2-03 Basovizza, 34012 Trieste)

Nafion-Induced dissolution on copper electrocatalyst via XAS measurements

13:30 - 15:00 **Lunch Break**

Session C1.2.3

Chair: Silvia Nappini

15:00 - 15:30 Luca D'Amario (Physical Chemistry-Ångström, Uppsala University)

C1.2.3-11 Catching Electrocatalytic Intermediates via Time-resolved Operando Spectroelectrochemistry

15:30 - 15:45 Angelja Kijar Surca (National Institute of Chemistry, Hajdrihova 19, 1000 Ljubljana, Slovenia)

C1.2.3-01 In situ Raman and in situ UV-visible spectroelectrochemical insights into lanthanum-modified Ni-oxides for the oxygen evolution reaction

15:45 - 16:15 Raffaello Mazzaro (Department of Physics and Astronomy, University of Bologna, Via Bertini Pichat 6/2, 40127 Bologna (IT).)

C1.2.3-12 Operando XAS of Photoanode Interfaces: From Steady-State Redox Chemistry to Dynamic Charge Transfer

16:15 - 16:45 Daniel Choukroun (Applied Electrochemistry & Catalysis (ELCAT), University of Antwerp)

C1.2.3-13 Insights into Nanoporous Copper Catalyst Layer Performance for CO₂ and CO Electroreduction

20:00 - 22:00 **Social Dinner**



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Materials for Sustainable
Development Conference

#MATSUS26

Mallorca, Spain

26th - 30th October, 2026



October 29th - Day 4 (Thursday)

Session C1.3.1

Chair: Francesca Risplendi

09:00 - 09:30	Jinsoo Kim (<i>Department of Chemical Engineering (Integrated Engineering), Kyung Hee University, Yongin-si, Republic of Korea</i>)
C1.3.1-I1	Ultrasonic Spray Pyrolysis-Assisted Synthesis of Pt, Ru, and Pd Supported on Gamma-Alumina Catalysts for Monobenzyl Toluene Hydrogenation
09:30 - 09:45	Ethan Berger (<i>Department of Physics and Astronomy, Chalmers University of Technology, Sweden</i>)
C1.3.1-O1	Finite-Temperature Simulations of Polarons and Oxygen Vacancies at the BiVO ₄ -Water Interface
09:45 - 10:00	Santiago Quesada Bonet (<i>Department of Applied Science and Technology, Politecnico di Torino, Corso Duca degli Abruzzi, 24, 10129 Torino TO, Italy</i>)
C1.3.1-O2	Electrodeposited Cu-triazole MOF electrodes for pulsed-bias-induced structural evolution toward methane in CO ₂ RR
10:00 - 10:30	Francesca M. Toma (<i>Helmholtz-Zentrum Hereon, Institute of Functional Materials for Sustainability, 14153, Teltow, Germany</i>)
C1.3.1-I2	Correlative Operando Characterization of Dynamic (Photo)electrochemical Interfaces
10:30 - 10:40	Closing
17:15 - 18:00	Plenary Session - Auditorium



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Materials for Sustainable
Development Conference

#MATSUS26

Mallorca, Spain

26th - 30th October, 2026



October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**

MATSUS Fall 2026 Conference (MATSUSFall26)

C2 Exsolution in Sustainable Catalyst Design

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: William Bowman, Moritz Kindelmann and Moritz L. Weber

Conference Program

October 26th - Day 1 (Monday)	
08:45 - 10:30 Plenary Session - Auditorium	
11:10 - 11:15 Opening C2 - Room 12	
	Session C2.1.1 Chair: William Bowman
11:15 - 11:45 C2.1.1-11	<u>Kalliopi Kousi</u> (<i>School of Chemistry and Chemical Engineering, University of Surrey, Surrey, GU2 7XH, United Kingdom</i>) Exsolved systems for CO ₂ hydrogenation to value added chemicals
11:45 - 12:00 C2.1.1-01	<u>Evangelos Andreou</u> (<i>School of Chemistry, University of St Andrews, St Andrews, Fife KY16 9ST, Scotland, UK</i>) Enhancing electrode stability of transition metal phosphides through exsolution for durable alkaline water electrolysis.
12:00 - 12:30 C2.1.1-12	<u>Kandis Gilliard-AbdulAziz</u> (<i>University of Southern California, Los Angeles, CA 90089, USA</i>) Exsolved Multifunctional Materials for Dynamic CO ₂ Capture and Conversion
12:30 - 13:00 C2.1.1-13	<u>Fabian Luca Buchauer</u> (<i>Technical University of Denmark (DTU), Denmark</i>) Exsolution for Low-Temperature Electrocatalysis: Ni-Fe-exsolution from STFNO
13:00 - 15:00 Lunch Break	
	Session C2.1.2 Chair: Moritz L. Weber
15:00 - 15:30 C2.1.2-11	<u>Felix Gunkel</u> (<i>Peter Gruenberg Institute, Electronic Materials (PGI-7), Forschungszentrum Juelich GmbH, 52425 Juelich, Germany</i>) Bulk and surface defect chemistry in exsolution-active perovskite oxides
15:30 - 15:45 C2.1.2-01	<u>Marta Ippolito</u> (<i>Department of Physics and Chemistry "Emilio Segrè", Università degli Studi di Palermo (Italy)</i>) Ni exsolution and defect chemistry of La(Sr)Mn(Ni,Cr)O ₃ for SOFC and SOEC Electrodes
15:45 - 16:15 C2.1.2-12	<u>Jonathan Polfus</u> (<i>Department of Chemistry, Centre for Materials Science and Nanotechnology, University of Oslo, PO Box 1033 Blindern, NO-0315 Oslo, Norway</i>) Exsolution of metal nanoparticles by control of point defects
16:15 - 16:45 C2.1.2-13	<u>Wayne Kaplan</u> (<i>Department of Materials Science and Engineering, Technion - Israel Institute of Technology, Haifa, 32000, Israel</i>) Experimental Studies of the Structure, Chemistry, and Energy at Equilibrated Metal-Ceramic Interfaces



October 27th - Day 2 (Tuesday)

Session C2.2.1

Chair: Moritz Kindelmann

09:00 - 09:30 Ivar Reimanis (*Colorado School of Mines, United States*)

C2.2.1-11 The Origins of Socketing of Metallic Particles on Oxide Surfaces

09:30 - 10:00 Dylan Jennings (*Advanced Transmission Electron Microscopy, Faculty of Physics and Astronomy & Research Center Future Energy Materials and Systems, Ruhr University Bochum, Germany*)

C2.2.1-12 In Situ TEM Studies of Exsolution Active Material Systems

10:00 - 10:30 Vincenzo ESPOSITO (*Department of Energy Conversion and Storage (DTU Energy), Technical University of Denmark, Agnes Nielsens Vej 301, DK-2800 Kongens Lyngby, Denmark*)

C2.2.1-13 Oxide Redox Architectures for Controlled Exsolution and Reversible Electrochemical Function

10:30 - 11:15 **Coffee Break**

Session C2.2.2

Chair: William Bowman

11:15 - 11:45 Alfonso J. Carrillo (*Instituto de Tecnología Química (ITQ), Universitat Politècnica de València- Consejo Superior de Investigaciones Científicas (UPV-CSIC), València, 46022 Spain*)

C2.2.2-11 Towards compositional optimization of multicomponent exsolved metallic nanoparticles

11:45 - 12:15 Andrea Kirsch (*Ruhr University Bochum, Bochum, Germany*)

C2.2.2-12 Multimetallic nanoparticle exsolution from compositionally complex spinels

12:15 - 12:45 Aleksandar Staykov (*Kyushu University, Fukuoka, Japan*)

C2.2.2-13 Electronic properties and surface stability of surface supported nanoparticles from first principle simulations

12:45 - 12:55 **Closing**

17:10 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**

October 28th - Day 3 (Wednesday)

20:00 - 22:00 **Social Dinner**

October 29th - Day 4 (Thursday)

17:15 - 18:00 **Plenary Session - Auditorium**

October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**

MATSUS Fall 2026 Conference (MATSUSFall26)

C3 Current bottlenecks of the industrial application of CO₂ electrolysis

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Balazs Endrodi and Kevinjeorjios Pellumbi

Conference Program

October 26th - Day 1 (Monday)	
08:45 - 10:30	Plenary Session - Auditorium
October 27th - Day 2 (Tuesday)	
17:10 - 18:00	Plenary Session - Auditorium
October 28th - Day 3 (Wednesday)	
20:00 - 22:00	Social Dinner
October 29th - Day 4 (Thursday)	
11:10 - 11:15	Opening C3 - Room 12
	Session C3.1.1 Chair: Kevinjeorjios Pellumbi
11:15 - 11:45	<u>Ulf-Peter Apfel</u> (<i>Ruhr-Universität Bochum, Bochum, Germany</i>)
C3.1.1-11	Bridging Catalyst Design, Electrode Engineering, and Reactor Integration
11:45 - 12:00	<u>Henri Pelzer</u> (<i>Institute of Applied Sciences, TU Delft, 2629 HZ, Delft, Netherlands</i>)
C3.1.1-01	Investigation of Water Management in MEA Cells for CO ₂ Electrolysis to Achieve Industry-Required Runtimes
12:00 - 12:30	<u>Joey Disch</u> (<i>ionys</i>)
C3.1.1-12	Material Diversity vs. Industrial Reality: Challenges for Component Suppliers in CO ₂ Electrolysis
12:30 - 13:00	<u>Sven Brückner</u> (<i>Technical University Berlin, Straße des 17. Juni 124, 10623 Berlin, Germany</i>)
C3.1.1-13	Diagnostic tools for CO ₂ electrolyzer cell degradation and failure
13:00 - 15:00	Lunch Break
	Session C3.1.2 Chair: Balazs Endrodi
15:00 - 15:30	<u>F. Pelayo García de Arquer</u> (<i>ICFO - The Institute of Photonic Sciences</i>)
C3.1.2-11	Dynamic approaches to designing CO ₂ electrolysis interfaces
15:30 - 15:45	<u>Laura Gatti</u> (<i>Center for Sustainable Future Technologies, Istituto Italiano di Tecnologia, Via Livorno 60, Torino, 10144 Italy</i>)
C3.1.2-01	Ultrasound-Assisted Mitigation of Salt Deposition in MEA CO ₂ Electrolyzers
15:45 - 16:00	<u>Hilmar Guzmán</u> (<i>Department of Applied Science and Technology (DISAT), Politecnico di Torino, C.so Duca degli Abruzzi, 24, 10129, Turin, Italy.</i>)
C3.1.2-02	Diagnostic Maps for Scaling Cu-Based CO ₂ Electrolyzers toward Integrated Capture–Conversion to Syngas
16:00 - 16:30	<u>David Wakerley</u> (<i>Dioxycle</i>)
C3.1.2-12	Scaling up carbon oxide electrolyzers
16:30 - 16:45	<u>Pedro Arias Villarroel</u> (<i>eChemicles Zrt.</i>)
C3.1.2-03	Two-Dimensional Spatial Mapping of CO ₂ Electrolyzers under Industrially Relevant Conditions
17:15 - 18:00	Plenary Session - Auditorium
18:00 - 19:30	Poster Session



October 30th - Day 5 (Friday)

09:00 - 10:30 Plenary Session - Auditorium

Session C3.2.1

Chair: Balazs Endrodi

11:15 - 11:30 Federica Zammillo (*Large-Scale Energy Storage Section, Process & Energy Department, Faculty of Mechanical Engineering, Delft University of Technology, Leeghwaterstraat 39, Delft 2628 CB, The Netherlands*)

Beyond steady-state: understanding the response of a zero-gap CO₂ electrolyzer to intermittent operations

11:30 - 11:45 Franz Bommas (*Fraunhofer Institute for Environmental, Safety, and Energy Technology UMSICHT*)
C3.2.1-02 Decoding Carbon Pathways in a Bicarbonate-Fed Zero-Gap Electrolyzer

11:45 - 12:15 Avni Guruji (*Flemish Institute for Technological Research (VITO)*)

C3.2.1-11 Overcoming Bottlenecks in Industrial CO₂ Electrolysis: Electrode Longevity and Reactor Scale-up

12:15 - 12:30 Dalia Leon-Chaparro (*Process & Energy Department, Faculty of Mechanical Engineering, Delft University of Technology*)

C3.2.1-03 Ultrathin ALD-grown SiO₂ layers on copper-based electrodes: enhanced ethylene selectivity and improved stability during CO₂ electroreduction

12:30 - 13:00 Mark Sassenburg (*TNO Sustainable Processes & Energy Systems (SPES)*)

C3.2.1-12 Upscaling of Electrochemical CO₂ Electrolysis: Process Conditions and Design Considerations

13:00 - 15:00 Lunch Break

Session C3.2.2

Chair: Kevinjeorjios Pellumbi

15:00 - 15:30 Luca Bohn (*Electrochemical Energy Systems, IMTEK – Department of Microsystems Engineering, University of Freiburg, Georges-Koehler-Allee 103, 79110 Freiburg, Germany*)

C3.2.2-11 Small Cell, Big Bottleneck: Investigation of Barriers for CO₂ Electrolysis at Lab Scale

15:30 - 16:00 Mohd Monis Ayyub (*SurfCat, Department of Physics, Technical University of Denmark, DK-2800 Kgs. Lyngby, Denmark*)

C3.2.2-12 Electrochemical CO₂ reduction coupled with hydrogen oxidation reaction

16:00 - 16:15 Attila Kormányos (*Department of Physical Chemistry and Materials Science, Interdisciplinary Excellence Centre, University of Szeged, Aradi Square 1, Szeged, H-6720 Hungary*)

C3.2.2-01 Electrocatalytic Oxidation of Glycerol as an Anode Process in CO₂ Electrolyzer Cells

16:15 - 16:30 Kevin Fernández Caso (*Large-Scale Energy Storage Section, Process & Energy Department, Faculty of Mechanical Engineering, Delft University of Technology, Leeghwaterstraat 39, Delft 2628 CB, The Netherlands*)

C3.2.2-02 Stability limits in Cu-based CO₂ electrolysis under Industrial conditions: the role of thermal and water transport effects

16:30 - 16:40 Closing

MATSUS Fall 2026 Conference (MATSUSFall26)

C4 Engineering sustainability with Single Atom Materials

Palma, Spain, 2026 October 26th - 30th

Conference Chair:

Conference Program

October 26th - Day 1 (Monday)
08:45 - 10:30 Plenary Session - Auditorium
October 27th - Day 2 (Tuesday)
17:10 - 18:00 Plenary Session - Auditorium
October 28th - Day 3 (Wednesday)
20:00 - 22:00 Social Dinner
October 29th - Day 4 (Thursday)
17:15 - 18:00 Plenary Session - Auditorium
October 30th - Day 5 (Friday)
09:00 - 10:30 Plenary Session - Auditorium

MATSUS Fall 2026 Conference (MATSUSFall26)

D1 Probing ligands on nanocrystals

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Philippe Green, Ona Segura Lecina and Francisco Yarur Villanueva

Conference Program

October 26th - Day 1 (Monday)

08:45 - 10:30 **Plenary Session - Auditorium**

October 27th - Day 2 (Tuesday)

08:55 - 09:00 **Opening D1 - Room 8**

Session D1.1.1

Chair: Philippe Green

09:00 - 09:30 Sascha Feldmann (*Laboratory for Energy Materials, École Polytechnique Fédérale de Lausanne (EPFL), Rue de l'Industrie 17, 1951 Sion, Switzerland*)

Photophysics and room temperature synthesis of the smallest doped halide perovskite nanocrystals

09:30 - 09:45 Riya Gupta (*Laboratory of Nanochemistry for Energy, École Polytechnique Fédérale de Lausanne (EPFL), Rue de l'Industrie 17, 1951 Sion, Switzerland*)

c-ALD-based Surface Chemistry Enables Water Transfer of Quantum Dots for Enhanced Photocatalytic Electron Transfer to Enzymes

09:45 - 10:00 Klara Suchan (*MAX IV Laboratory, Lund University*)

D1.1.1-O2 Dynamic Pathway Selection During Nanocrystal Mesocrystal Assembly

10:00 - 10:30 Viktoriia Morad (*Rowland Institute, Harvard University, US*)

D1.1.1-I2 Stabilizing Dynamic Perovskite Nanocrystal Surfaces: From Bright Emission to Charge Extraction

10:30 - 11:15 **Coffe Break**

Session D1.1.2

Chair: Philippe Green

11:15 - 11:45 Marcus Scheele (*Institute for Physical und Theoretical Chemistry, Universität Tübingen, 72076 Tübingen, Germany*)

Visualizing and exploiting the ligand sphere of lead halide perovskite nanocrystals for lighting applications

11:45 - 12:15 Dmitry Baranov (*Chemical Physics and NanoLund, Lund University, P.O. Box 124, 22100 Lund, Sweden*)

Various Roles of Ligands in Perovskite Nanocrystal Superlattices

12:15 - 12:30 Sergio Kogikoski Junior (*Institute of Chemistry, University of Potsdam, Karl-Liebknecht 24-25, 14476, Golm, Potsdam*)

Not Always the Same: the Metal-Molecule Interactions in Gold and Silver Nanoparticles in Plasmonic-Induced Reactions

12:30 - 15:00 **Lunck break**

Session D1.1.3

Chair: Ona Segura Lecina

15:00 - 15:30 Alexander Urban (*Nanospectroscopy Group, Nano-Institute Munich, Department of Physics, Ludwig-Maximilians-Universität München*)

Polymer-Controlled Perovskite Nanocrystals: From Nanoreactors to Stable Light-Emitting Films

15:30 - 15:45 Marco Fabbiano (*Laboratory of Nanochemistry for Energy, École Polytechnique Fédérale de Lausanne (EPFL), Rue de l'Industrie 17, 1951 Sion, Switzerland*)

Surface chemistry of ZnSe QDs dictates the interaction with organic substrates for direct triplet sensitization

15:45 - 16:15 Zachary VanOrman (*Hope College, US*)

D1.1.3-I2 Probing Ligand-Induced Chirality in Halide Perovskite Nanomaterials

16:15 - 16:30 Lidia Dubenska (*ETH Zürich, Department of Chemistry and Applied Biosciences, Vladimir-Prelog-Weg 1-5, Zürich CH-8093, Switzerland*)

Ligand Footprints on CsPbBr₃ Nanocrystal Surfaces Probed by Colloidal ¹³³Cs NMR Spectroscopy

16:30 - 16:40 **Closing D1**

17:10 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**



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Materials for Sustainable
Development Conference

#MATSUS26

Mallorca, Spain

26th - 30th October, 2026



October 28th - Day 3 (Wednesday)

20:00 - 22:00 **Social Dinner**

October 29th - Day 4 (Thursday)

17:15 - 18:00 **Plenary Session - Auditorium**

October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**

MATSUS Fall 2026 Conference (MATSUSFall26)

D2 Functional Materials for Emerging Photovoltaics: from Everyday Integration to Extreme Environments

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Jessica Barichello, Stefania Cacovich and Fabio Matteocci

Conference Program

October 26th - Day 1 (Monday)	
08:45 - 10:30	Plenary Session - Auditorium
October 27th - Day 2 (Tuesday)	
17:10 - 18:00	Plenary Session - Auditorium
October 28th - Day 3 (Wednesday)	
11:10 - 11:15	Opening D2 - Room 10
	Session D2.1.1 Chair: Stefania Cacovich
11:15 - 11:45	<u>Sofia Masi</u> (<i>Universitat Jaume I, Institute of Advanced Materials (INAM)</i>)
D2.1.1-I1	Compositional and Interfacial Strategies to Mitigate Instability Pathways in Mixed-Halide Perovskites for Emerging Photovoltaics
11:45 - 12:00	<u>Stepan Demchyshyn</u> (<i>Division of Soft Matter Physics, Institute of Experimental Physics, Johannes Kepler University Linz, Linz, Austria</i>)
D2.1.1-O1	Lightweight and Flexible Perovskite Solar Cells: From Terrestrial Applications to Space Testing
12:00 - 12:15	<u>Guillermo Martínez-Denegri</u> (<i>Solar Energy Division, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Germany</i>)
D2.1.1-O2	Textured Flexible Perovskite Solar Cells for Efficient and Stable Space Applications
12:15 - 12:45	<u>Morten Madsen</u> (<i>University of Southern Denmark, SDU CAPE, MCI</i>)
D2.1.1-I2	Scalable Organic and Tandem Photovoltaics for the Built Environment: Designing Color and Semi-transparency for Targeted Applications
12:45 - 13:00	<u>Yunan Chen</u> (<i>Karlsruhe Institute of Technology (KIT), Lichttechnisches Institut, Engesserstrasse 13, 76131 Karlsruhe, Germany</i>)
D2.1.1-O3	Decoupling Transparency from Film Thickness: Optical Dilution Using a Transparent Insulator Filler Boosts Light Utilization Efficiency in Thick-film Semitransparent Organic Solar Cells
13:00 - 15:00	Lunch Break
	Session D2.1.2 Chair: Fabio Matteocci
15:00 - 15:30	<u>Marina FREITAG</u> (<i>Newcastle University</i>)
D2.1.2-I1	Light to Logic
15:30 - 15:45	<u>Fátima Santos</u> (<i>LEPABE - Laboratory for Process Engineering, Environment, Biotechnology and Energy, Faculty of Engineering, University of Porto, Rua Dr. Roberto Frias, 4200-465 Porto, Portugal</i>)
D2.1.2-O1	Towards Practical Indoor Energy Harvesting: High-Voltage Monolithic DSSC Modules for IoT Applications
15:45 - 16:00	<u>Sami Toikkonen</u> (<i>Hybrid Solar Cells, Faculty of Engineering and Natural Sciences, Tampere University, P.O. Box 541, Tampere FI-33720, Finland</i>)
D2.1.2-O2	Low-Light Indoor Operation Reveals Multiple Hysteresis Mechanisms in Perovskite Photovoltaics
16:00 - 16:30	<u>Robert Hoye</u> (<i>Inorganic Chemistry Laboratory, University of Oxford, UK</i>)
D2.1.2-I2	Powering edge computing through indoor photovoltaics - opportunities and challenges
16:30 - 17:00	<u>Paola Vivo</u> (<i>Hybrid Solar Cells, Faculty of Engineering and Natural Sciences, Tampere University, P.O. Box 541, Tampere, FI-33014 Finland</i>)
D2.1.2-I3	Designing Lead-Free Perovskite-Inspired Materials for Indoor Energy Harvesting: From Materials to Devices



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17:00 - 17:30 Joondong KIM (*Incheon National University*)

D2.1.2-I4 Transparent Photovoltaics from Land to Water: Water-Interfaced Transparent Photovoltaics and Underwater Energy Harvesting

17:30 - 17:45 Quanrun QIU (*Department of Materials Science and Engineering, City University of Hong Kong,*

D2.1.2-O3 *Kowloon, Hong Kong 999077, China*)

Beyond Device Optimization: Toward Underwater Application Potential and System-Level Verification of Perovskite Photovoltaics

20:00 - 22:00 **Social Dinner**



October 29th - Day 4 (Thursday)

Session D2.2.1

Chair: Jessica Barichello

- 09:00 - 09:30 **D2.2.1-I1** Michael Wagner (*Forschungszentrum Jülich GmbH, Institute of Energy Materials and Devices - Photovoltaik (IMD-3), Immerwahrstraße 2, 91058 Erlangen, Germany*)
Large Scale Flexible Photovoltaics: Minimizing upscaling losses from organic and perovskite based PV and decreasing the market entry barrier
- 09:30 - 09:45 **D2.2.1-O1** Brian Wieliczka (*Clarendon Laboratory, Department of Physics, University of Oxford, Oxford, United Kingdom.*)
Assessing and Reproducing Quantum Cutting in Lead Halide Perovskites
- 09:45 - 10:00 **D2.2.1-O2** Hryhorii Parkhomenko (*Faculty of Physics and Astronomy, Adam Mickiewicz University, Poznań 61-614, Poland*)
Influence of Device Architecture and Bifacial Design on Radiation-Induced Degradation in Perovskite Solar Cells
- 10:00 - 10:15 **D2.2.1-O3** Abraha Gidey (*Laboratory for Solar Energy & Fuels (LSEF), School of Engineering, The University of British Columbia, Kelowna V1V 1V7, Canada*)
Room-Temperature Synthesized SnO₂ Quantum Dots as an Efficient Charge Transport Layer for Scalable Perovskite Photovoltaics
- 10:15 - 10:30 **D2.2.1-O4** Frej Mighri (*Research center for high performance polymer and composite systems, CREPEC, Laval University, QC, Canada, G1A 0A6*)
New flexible electrospun PET/TiO₂ photoanode layer for dye-sensitized solar cells, DSSCs, and their optical and photovoltaic performances

10:30 - 11:15 **Coffee Break**

Session D2.2.2

Chair: Stefania Cacovich

- 11:15 - 11:45 **D2.2.2-I1** Aslihan H. Babayigit (*Institute for Materials Research (IUMAT), UHasselt, B-3500 Hasselt, Belgium*)
Disentangling Ion Migration from Artifacts in High-Fidelity ToF-SIMS Depth Profiling of Perovskite Solar Cells
- 11:45 - 12:00 **D2.2.2-O1** Jeffrey Capitão (*LEPABE - Laboratory for Process Engineering, Environment, Biotechnology and Energy, ALiCE - Associate Laboratory in Chemical Engineering, Faculty of Engineering, University of Porto, Rua Dr. Roberto Frias, 4200-465 Porto, Portugal*)
Electrically Connected Double-Sided FTO Substrates for Tandem Solar Cell Architectures

12:00 - 12:10 **Closing D2**

17:15 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**



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October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**

MATSUS Fall 2026 Conference (MATSUSFall26)

D3 Next-Generation Processing Strategies for Emerging Semiconductor Technologies

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Donal Bradley, Martyn Mclachlan and Julianna Panidi

Conference Program

October 26th - Day 1 (Monday)	
08:45 - 10:30	Plenary Session - Auditorium
October 27th - Day 2 (Tuesday)	
17:10 - 18:00	Plenary Session - Auditorium
October 28th - Day 3 (Wednesday)	
20:00 - 22:00	Social Dinner
October 29th - Day 4 (Thursday)	
08:55 - 09:00	Opening D3 - Room 8
	Session D3.1.1 Chair: Martyn Mclachlan
09:00 - 09:30	<u>Thomas Anthopoulos</u> (<i>Department of Chemistry, University of Manchester, Oxford Road, Manchester, M13 9PL, UK</i>) Printable Organic Hydrogen Sensors for the Emerging Hydrogen Industries
09:30 - 09:45	<u>Patipan Sukpoonprom</u> (<i>Department of Materials Science and Engineering, School of Molecular Science and Engineering, Vidyasirimedhi Institute of Science and Technology (VISTEC), Rayong, 21210, Thailand</i>) Hybrid charge-transport materials for high-performance optoelectronic applications
09:45 - 10:00	<u>Tzu-Yen Huang</u> (<i>National Synchrotron Radiation Research Center, Taiwan</i>) Depth-Resolved Morphology and Thermal Stability of Solution-Processed Molecularly Doped PM6 Thin Films
10:00 - 10:30	<u>Mariano Campoy Quiles</u> (<i>Institut de Ciència de Materials de Barcelona (ICMAB), CSIC, Carrer dels Til·lers sn, Bellaterra, 08193, Spain</i>) Controlled thickness gradients: from high throughput screening of solar cells, to miniature spectrometers and microcavity enhanced Raman
10:30 - 11:15	Coffee Break
	Session D3.1.2 Chair: Julianna Panidi
11:15 - 11:45	<u>Morten Madsen</u> (<i>SDU Centre for Advanced Photovoltaics and Thin-film Energy Devices (CAPE), Mads Clausen Institute (MCI), Sønderborg 6400, Denmark</i>) Scalable organic photovoltaics for indoor applications
11:45 - 12:15	<u>Daniel Packwood</u> (<i>Institute for Integrated Cell-Material Sciences (WPI-iCeMS), Kyoto University</i>) Towards first-principles modeling of OPV devices using random structure searching and machine learning
12:15 - 12:45	<u>Vida Engmann</u> (<i>University of Southern Denmark, SDU CAPE, MCI</i>) A healthy diet for stable organic solar cells
12:45 - 15:00	Lunch Break
	Session D3.1.3 Chair: Julianna Panidi
15:00 - 15:15	<u>Xuqi Liu</u> (<i>Laboratory of Inorganic Chemistry, Department of Chemistry and Applied Biosciences, ETH Zürich, CH-8093 Zürich, Switzerland</i>) Toward 3D Optoelectronics: Monolithic Integration of Vertically Stacked Perovskite Color Imagers



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15:15 - 15:30 Quang Nhat Dang Lung (*Laboratory of Inorganic Chemistry, Department of Chemistry and Applied Biosciences, ETH Zürich, CH-8093 Zürich, Switzerland*)

Monolithic Perovskite-on-CMOS Image Sensors

15:30 - 16:00 David Payne (*Imperial College London, Exhibition Rd, South Kensington, London SW7 2AZ, UK*)

Exsolution in oxide systems beyond perovskites

17:15 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**



October 30th - Day 5 (Friday)

09:00 - 10:30 Plenary Session - Auditorium

Session D3.2.1

Chair: Martyn Mclachlan

- 11:15 - 11:45 Florian Mathies (*Helmholtz-Zentrum Berlin für Materialien und Energie, Hahn-Meitner-Platz 1, 14109 Berlin, Germany*)
D3.2.1-I1 From Laboratory Discovery to Scalable Manufacturing: Printing and Coating Strategies for Perovskite Photovoltaics within the Solar TAP Initiative
- 11:45 - 12:00 Daimiota Takhellambam (*CHOSE- Centre for Hybrid and Organic Solar Energy, Department of Electronics Engineering, University of Rome "Tor Vergata", Via del Politecnico 1- 00133 Roma, Italy.*)
D3.2.1-O1 Augmenting Green Solvents in Upscaling Flexible Perovskite Solar Cells in Ambient Air
- 12:00 - 12:15 Susan Rigter (*Vrije University (VU) Amsterdam*)
D3.2.1-O2 Metal-free perovskites: another handle on tunability
- 12:15 - 12:45 Francesca Brunetti (*CHOSE (Centre for Hybrid and Organic Solar Energy) Department of Electronic Engineering, Tor Vergata University of Rome Tor Vergata, Via del Politecnico 1, 00133 Rome, Italy*)
D3.2.1-I2 Printed Flexible Perovskites Solar Cells and Modules for Applications in Indoor and Space Environment
- 12:45 - 13:00 Javier Castillo-Seoane (*Laboratory of Semiconductor Materials. École Polytechnique Fédérale de Lausanne (EPFL). Rte. Cantonale, 1015 Lausanne (Switzerland)*)
D3.2.1-O3 Zn₃P₂ photovoltaics: from earth-abundant absorber to advanced device architectures

13:00 - 13:10 Closing D3



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D4 Iontronics

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Roberto Fenollosa Esteve and Francesco Rossella

Conference Program

October 26th - Day 1 (Monday)

08:45 - 10:30 **Plenary Session - Auditorium**

11:10 - 11:15 **Opening D4 - Room 4**

Session D4.1.1

Chair: Juan Bisquert

11:15 - 11:45 Valeria Demontis (*Dipartimento di Fisica, Università di Cagliari, 09042 Monserrato, Italy*)

D4.1.1-I1 Neuromorphic Behavior in Low-Dimensional Semiconductor and Halide Perovskite Optoelectronic Devices

11:45 - 12:00 So-Yeon Kim (*Instituto de Tecnología Química (ITQ), Consejo Superior de Investigaciones Científicas-Universitat Politècnica de València (CSIC-UPV), Valencia, Spain*)

D4.1.1-O1 Composition and Interface Control of Ionic Motion in Halide Perovskite Memristors

12:00 - 12:15 Sanjay Jatav (*Institute of Inorganic and Applied Chemistry, University of Hamburg, Martin-Luther-King-Platz 6, 20146 Hamburg, Germany*)

D4.1.1-O2 Key Factors Influencing the Performance of Hermetic Hydrovoltaic Cell

12:15 - 12:45 Gaetano Scamarcio (*CNR-NANO, Istituto Nanoscienze, Pisa*)

D4.1.1-I2 From Physisorbed Molecular Dipole Networks to Optical and Electronic Transduction

12:45 - 15:00 **Lunch Break**

Session D4.1.2

Chair: Takashi Tsuchiya

15:00 - 15:30 Juan Bisquert (*Instituto de Tecnología Química (ITQ), Consejo Superior de Investigaciones Científicas-Universitat Politècnica de València (CSIC-UPV), Valencia, Spain*)

D4.1.2-I1 Dynamical Principles of Oscillators for Unconventional Computation: From Solid-State Devices to Organic and Fluidic Neurons

15:30 - 16:00 Shimpei Ono (*International Center for Synchrotron Radiation Innovation Smart, Tohoku University*)

D4.1.2-I2 Advanced Functionalities of Ions

16:00 - 16:15 Gonzalo Rivera-Sierra (*Instituto de Tecnología Química, Universitat Politècnica de València - Consejo Superior de Investigaciones Científicas (UPV-CSIC), Avd. dels Tarongers s/n, València 46022, Spain*)

D4.1.2-O1 From Impedance to Bifurcation: Stability Mapping of Self-Oscillatory Devices

16:15 - 16:30 Roberto Fenollosa (*Instituto de Tecnología Química (ITQ), Consejo Superior de Investigaciones Científicas-Universitat Politècnica de València (CSIC-UPV), Valencia, Spain*)

D4.1.2-O2 Continuous Integrate-and-Fire Dynamics without Resets or Negative Differential Resistance

16:30 - 17:00 Susan Fullerton Shirey (*The Department of Chemical and Petroleum Engineering, University of Pittsburgh*)

D4.1.2-I3 Electric-Field-Sensitive Solid Polymer Electrolytes for Tuning Electric Double Layer Dynamics

17:00 - 17:30 Luisa Torsi (*Università degli Studi di Bari Aldo Moro*)

D4.1.2-I4 From Ensemble Binding to Single-Molecule Statistics in pH-conditioned biosensing



October 27th - Day 2 (Tuesday)

Session D4.2.1

Chair: Roberto Fenollosa Esteve

09:00 - 09:30 Masaki Nakano (*Shibaura Institute of Technology*)

D4.2.1-I1 Gate-Tunable Magnetism in Layered van der Waals Materials

09:30 - 09:45 Francesco Rossella (*Dipartimento di Scienze Fisiche, Informatiche e Matematiche, Università degli Studi di Modena e Reggio Emilia, via G. Campi 213/A, 41125 Modena, Italy*)

D4.2.1-O1 nanowire quantum iontronics

09:45 - 10:00 Valerii Kotok (*Laboratoire Charles Coulomb (L2C, UMR CNRS 5221), Université de Montpellier, Montpellier, France*)

D4.2.1-O2 Investigating Biological Ion Channel-SWCNT Coupling for Artificial Channel Synthesis

10:00 - 10:30 Liza Herrera Diez (*C2N, Université Paris-Saclay, CNRS, 91405, Orsay, France*)

D4.2.1-I2 Magneto-ionic control of magnetic textures

10:30 - 11:15 **Coffee Break**

Session D4.2.2

Chair: Shimpei Ono

11:15 - 11:30 Jitendra Kumar (*Instituto de Tecnología Química (ITQ), Consejo Superior de Investigaciones Científicas-Universitat Politècnica de València, 46022, Valencia, Spain*)

D4.2.2-O1 Neuron-like Bursting in a Negative Differential Resistance System

11:30 - 12:00 Takashi Tsuchiya (*Research Center for Materials Nanoarchitectonics, National Institute for Materials Science*)

D4.2.2-I1 Ion-Gating Reservoirs for Low Power, Accurate, and Fast In-Sensor Computing

12:00 - 12:30 Iliia Valov (*Institute of Electrochemistry and Energy Systems, BAS, acad. G. Bonchev Str. Bl.10, 1113, Sofia, Bulgaria*)

D4.2.2-I2 Electrochemical Polishing Approach for Reliable Quantum Levels in Nanoionic Devices

12:30 - 15:00 **Lunch Break**

Session D4.2.3

Chair: Francesco Rossella

15:00 - 15:30 Eugenio Cinguanta (*Istituto di Fotonica e Nanotecnologie (IFN-CNR)*)

D4.2.3-I1 THz time-domain and ultrafast spectroscopy of iontronic devices: from organic mixed-conductor THz metadevices to ion-gated graphene

15:30 - 15:45 Mattia Bosi (*Department of Physics, Informatics and Mathematics, Università degli Studi di Modena e Reggio Emilia*)

D4.2.3-O1 Sustainable time-temperature integrator for perishable fresh foods based on polymer/graphene blends

15:45 - 16:00 Matteo Genitoni (*Center for Translational Neurophysiology of Speech and Communication, Istituto Italiano di Tecnologia, Ferrara, 44121, Italy.*)

D4.2.3-O2 Specific interactions of alkali cations with PEDOT:PSS in Electrolyte-Gated Organic Transistors

16:00 - 16:15 Daiki Nishioka (*National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan.*)

D4.2.3-O3 Ion-Gating Reservoir for Efficient Processing of Sensor Data at the Edge

16:15 - 16:25 **Closing D4**

17:10 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**



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October 28th - Day 3 (Wednesday)

20:00 - 22:00 **Social Dinner**

October 29th - Day 4 (Thursday)

17:15 - 18:00 **Plenary Session - Auditorium**

October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**



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D5 - Spintronic Nanodevices for Unconventional Computing

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Tristan da Câmara Santa Clara Gomes and Simon de Wergifosse

Conference Program

October 26th - Day 1 (Monday)	
08:45 - 10:30	Plenary Session - Auditorium
October 27th - Day 2 (Tuesday)	
17:10 - 18:00	Plenary Session - Auditorium
October 28th - Day 3 (Wednesday)	
20:00 - 22:00	Social Dinner
October 29th - Day 4 (Thursday)	
17:15 - 18:00	Plenary Session - Auditorium
18:00 - 19:30	Poster Session
October 30th - Day 5 (Friday)	
09:00 - 10:30	Plenary Session - Auditorium
11:10 - 11:15	Opening D5 - Room 10
	Session D5.1.1 Chair: Simon de Wergifosse
11:15 - 11:45	<u>Damien Querlioz</u> (<i>Univ Paris-Saclay, CNRS</i>)
D5.1.1-I1	A hybrid memristor-magnetic tunnel junction Ising machine
11:45 - 12:15	<u>Philippe Talatchian</u> (<i>Univ. Grenoble Alpes, CEA, CNRS, Grenoble INP, SPINTEC, 38000 Grenoble, France</i>)
D5.1.1-I2	Hardware Training of Stochastic Multilayer Spintronic Neural Networks
12:15 - 12:45	<u>Flavio Abreu Araujo</u> (<i>Université catholique de Louvain (UCLouvain)</i>)
D5.1.1-I3	Energy-Efficient In-Memory Computing with Non-Volatile N-ary Spintronic Crossbar Arrays for Sustainable AI
12:45 - 13:15	<u>Jack Gartside</u> (<i>Imperial College London</i>)
D5.1.1-I4	Learning Nonlinear Heterogeneity in Physical Kolmogorov-Arnold Networks
13:15 - 15:00	Lunch Break
	Session D5.1.2 Chair: Tristan da Câmara Santa Clara Gomes
15:00 - 15:30	<u>Mathias Klaeui</u> (<i>Institute of Physics, Johannes Gutenberg University Mainz</i>)
D5.1.2-I1	Stochastic Dynamics and Skyrmions for AI and AI for Skyrmion Research
15:30 - 16:00	<u>Frank Mizrahi</u> (<i>Laboratoire Albert Fert</i>)
D5.1.2-I2	Radiofrequency spintronic networks
16:00 - 16:30	<u>Liza Herrera Diez</u> (<i>Centre de Nanosciences et de Nanotechnologies, CNRS, Université Paris-Saclay, 91120 Palaiseau, France</i>)
D5.1.2-I3	Designing synaptic functionalities through magneto-ionic control of a spin-reorientation transition and domain wall motion
16:30 - 17:00	<u>Akash Kumar</u> (<i>Department of Physics, University of Gothenburg</i>)
D5.1.2-I4	Scalable and programmable spin Hall nano-oscillator arrays for unconventional computing
17:00 - 17:10	Closing D5

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D6 Automated & AI-Accelerated Discovery of Sustainable Materials

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Maciej Haranczyk and Jose Recatala-Gomez

Conference Program

October 26th - Day 1 (Monday)	
08:45 - 10:30	Plenary Session - Auditorium
October 27th - Day 2 (Tuesday)	
17:10 - 18:00	Plenary Session - Auditorium
18:00 - 19:30	Poster Session
October 28th - Day 3 (Wednesday)	
08:55 - 09:00	Opening D6 - Room 8
	Session D6.1.1 Chair: Jose Recatala-Gomez
09:00 - 09:30	<u>Sergio Pablo-García</u> (<i>Instituto de Micro y Nanotecnología (IMN-CSIC)</i>)
D6.1.1-I1	Building the autonomous lab: orchestration, lab as code, and data integration
09:30 - 09:45	<u>Jose Carlos Madrid Madrid</u> (<i>International Institute for Carbon-Neutral Energy Research (WPI-I2CNER), Kyushu University, Japan.</i>)
D6.1.1-O1	Benchmarking Foundation Machine-Learned Interatomic Potentials for Oxygen Ion Transport in YSZ/GDC Interdiffusion Layers
09:45 - 10:00	<u>Matthew Osvaldo</u> (<i>Nanyang Technological University (NTU), Singapore</i>)
D6.1.1-O2	GraphChem3D: Bond-Centric Prediction of Molecular 3D Structure
10:00 - 10:30	<u>Basita Das</u> (<i>AMOLF</i>)
D6.1.1-I2	HELIOS: AI-native physical laboratory to execute a million experiments a minute
10:30 - 11:15	Coffee Break
	Session D6.1.2 Chair: Maciej Haranczyk
11:15 - 11:45	<u>Milad Abolhasani</u> (<i>North Carolina State University, Department of Chemical and Biomolecular Engineering</i>)
D6.1.2-I1	Self-Driving Laboratories for Accelerated Discovery of Sustainable Functional Materials
11:45 - 12:15	<u>Martin Aaskov Karlsen</u> (<i>Department of Energy Conversion and Storage, Technical University of Denmark</i>)
D6.1.2-I2	ScatterLab: a scattering-based, self-driving laboratory for structure-informed autonomous synthesis of functional nanomaterials
12:15 - 12:30	<u>Lars Sonneveld</u> (<i>LMPV-Sustainable Energy Materials Department, AMOLF, Science Park 104, Amsterdam 1098 XG, The Netherlands</i>)
D6.1.2-O1	Closed-Loop Perovskite Optimization via High-Throughput Optical Proxy Metrics
12:30 - 13:00	<u>Leonard Ng Wei Tat</u> (<i>School of Materials Science and Engineering, Nanyang Technological University,</i>)
D6.1.2-I3	From Photovoltaics to Hydrometallurgy: Self-Driving Laboratories as a Universal Engine for Accelerated Materials Discovery
13:00 - 15:00	Lunch Break
	Session D6.1.3 Chair: Jose Recatala-Gomez
15:00 - 15:15	<u>Morven Holland</u> (<i>Imperial College London, Department of Materials, London SW7 2AZ, UK.</i>)
D6.1.3-O1	Automated, High Throughput Electrocatalyst Discovery for PEM Electrolysis
15:15 - 15:45	<u>Ozlem Ozcan</u> (<i>German Federal Institute for Materials Research and Testing (BAM)</i>)
D6.1.3-I1	Design and Optimization of Electrochemical Interfaces using Material Acceleration Platforms (MAPs)
15:45 - 15:55	Closing D6

20:00 - 22:00 **Social Dinner**



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October 29th - Day 4 (Thursday)

17:15 - 18:00 **Plenary Session - Auditorium**

October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**



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D7 High Throughput Electrode Synthesis and Manufacturing

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Dries De Sloovere, Nadia Farag and Chengyin Fu

Conference Program

October 26th - Day 1 (Monday)

08:45 - 10:30 **Plenary Session - Auditorium**

11:10 - 11:15 **Opening D7 - Room 8**

Session D7.1.1

Chair: Nadia Farag

11:15 - 11:45 Mesfin Haile Mamme (*Sustainable Materials Engineering Research group (SUME), Vrije Universiteit Brussel (VUB), Brussels, Belgium*)

Accelerating Advanced Materials Discovery in the age of Artificial Intelligence

11:45 - 12:15 Leonard Ng (*School of Materials Science and Engineering, Nanyang Technological University*)

D7.1.1-I2 High Throughput Fabrication of Carbon Electrodes, from Conformal Printing to Self-Driving Roll-to-Roll Manufacturing

12:15 - 12:45 Jose Recatala Gomez (*Department of Chemistry, Department of Materials Science and Engineering, University of California, Berkeley 94720*)

D7.1.1-I3 A-Lab: converging AI and robotics for battery materials.

12:45 - 15:00 **Lunch Break**

Session D7.1.2

Chair: Dries De Sloovere

15:00 - 15:30 An Hardy (*U Hasselt, Institute for Materials Research (IUMAT), Design and Synthesis of Inorganic Materials (DESINE), Martelarenlaan 42, B-3500 Hasselt, Belgium ; imec, IUMAT, Wetenschapspark 1, B-3590 Diepenbeek, Belgium; EnergyVille, IUMAT, Thor Park 8320, B-3600 Genk, Belgium*)

D7.1.2-I1 Aqueous Solution-Gel Synthesis of Electrode Materials for Lithium and Sodium Ion Batteries: Ideal for Fast Screening?

15:30 - 16:00 Anssi Laukkanen (*VTT Technical Research Centre of Finland Ltd*)

D7.1.2-I2 Agentic AI and Multiscale Modelling for Inverse Design of Battery Materials, Synthesis and Electrode Manufacturing

16:00 - 16:30 Niamh Hartley (*Imperial College London, Exhibition Rd, South Kensington, London SW7 2AZ, UK*)

D7.1.2-I3 A Practical Application of Automation in Accelerating Battery Research and Developing Self-Driving Labs: An Additive Study

16:30 - 16:45 Nicolas Rospars (*Centre Suisse d'Electronique et de Microtechnique (CSEM), Rue Jaquet-Droz 1, 2002, Neuchâtel, Switzerland*)

D7.1.2-O1 Vacuum Engineering of Lithium Metal Anodes: from Metallic Interlayers to Artificial SEI

16:45 - 16:55 **Closing D7**



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October 27th - Day 2 (Tuesday)

17:10 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**

October 28th - Day 3 (Wednesday)

20:00 - 22:00 **Social Dinner**

October 29th - Day 4 (Thursday)

17:15 - 18:00 **Plenary Session - Auditorium**

October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**

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E1 Solar-driven systems for renewable fuels and chemical generation; Towards viable Solar fuels technology

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Sudhanshu Shukla and Francesca Toma

Conference Program

October 26th - Day 1 (Monday)	
08:45 - 10:30	Plenary Session - Auditorium
October 27th - Day 2 (Tuesday)	
14:55 - 15:00	Opening E1 - Room 11
	Session E1.1.1 Chair: Sudhanshu Shukla
15:00 - 15:15 E1.1.1-O1	<u>Raffaello Mazzaro</u> (<i>Department of Physics and Astronomy, University of Bologna, Via Bertini Pichat 6/2, 40127 Bologna (IT).</i>) High-Throughput Strategies for Accelerated Discovery and Mechanistic Understanding of Photoelectrocatalytic Materials
15:15 - 15:30 E1.1.1-O2	<u>Neus Munar Barceló</u> (<i>Institute of Chemical Research of Catalonia (ICIQ) (ES)</i>) Engineering 3D-Printed Photocatalytic Systems for Scalable Water Remediation via FDM and DLP
15:30 - 16:00 E1.1.1-I1	<u>Roland Marschall</u> (<i>Physical Chemistry III, University of Bayreuth, Universitätsstr. 30, 95447 Bayreuth, Germany</i>) Supply risk considerations for photoelectrochemical water splitting materials
16:00 - 16:30 E1.1.1-I2	<u>Nestor Guijarro Carratalá</u> (<i>Institute of Electrochemistry, University of Alicante</i>) Beyond petroleum – Sourcing petrochemicals from lignin using light
17:10 - 18:00	Plenary Session - Auditorium
18:00 - 19:30	Poster Session



October 28th - Day 3 (Wednesday)

Session E1.2.1

Chair: Francesca Toma

09:00 - 09:30 Johanna Eichhorn (*Physics Department, TUM School of Natural Sciences, Technical University of Munich, Am Coulombwall 4, 85748 Garching, Germany*)

Interfaces, surfaces, and defects in photoelectrochemical energy materials

09:30 - 10:00 David Tilley (*University of Zurich, Zurich 8057, Switzerland*)

E1.2.1-12 Cuprous Oxide for Solar-Driven Chemical Manufacturing

10:00 - 10:30 Erwin Reisner (*Yusuf Hamied Department of Chemistry, University of Cambridge, Cambridge, Lensfield road, CB2 1EW, United Kingdom*)

E1.2.1-13 Solar reforming of biomass and plastic waste streams

10:30 - 11:15 **Coffee Break**

Session E1.2.2

Chair: Sudhanshu Shukla

11:15 - 11:45 Fatwa Firdaus Abdi (*School of Energy and Environment, City University of Hong Kong, 83 Tat Chee Avenue, Kowloon, Hong Kong SAR, China*)

E1.2.2-11 Engineering the photoanode beyond oxygen evolution

11:45 - 12:00 KHADIIJA MZIBRI (*Laboratoire de Glycochimie et des Agroressources d'Amiens (LG2A), Université de Picardie Jules Verne*)

E1.2.2-01 Solar Hydrogen Production from Biomass-Derived Carbohydrates over Au/TiO₂: Unravelling Photoreforming Mechanisms under Simulated Sunlight

12:00 - 12:15 Abhinav Bhanawat (*Laboratory of Renewable Energy Science and Engineering, EPFL-STI-IGM-LRESE, Station 9, 1015 Lausanne*)

E1.2.2-02 Multi-Scale Multi-Physics Modelling of Porous Fibrous Photoelectrochemical Reactors for Hydrogen Evolution and Glycerol Valorisation

12:15 - 12:30 Ziyan Pan (*Laboratory of Nanoscience for Energy Technologies (LNET) EPFL*)

E1.2.2-03 From Loss Diagnosis to Rational Design: A Unified Analytical Model for Photoelectrochemical Cells

12:30 - 13:00 F. Pelayo García de Arquer (*ICFO*)

E1.2.2-12 Crossing reactive carbon and nitrogen pathways with electrolysis

13:00 - 15:00 **Lunch Break**

Session E1.2.3

Chair: Francesca Toma

15:00 - 15:15 Isaac Holmes-Gentle (*Department of Chemistry, University of Oxford, United Kingdom*)

E1.2.3-01 Experimental Pitfalls and Best Practices for Heterogeneous CO₂ Photohydrogenation

15:15 - 15:30 Jakob Praxmair (*Department of Chemistry and Physics of Materials, University of Salzburg, 5020 Salzburg, Austria.*)

E1.2.3-02 Degradation of LaTiO₂N-CoOx Particles for Photocatalytic Solar Water Splitting

15:30 - 16:00 Takeshi Morikawa (*Toyota Central R&D Labs., Inc.*)

E1.2.3-11 Photocatalytic and electrochemical CO₂ reduction by semiconductors, metal complexes, and their hybrid systems

16:00 - 16:30 Nuria Lopez (*Institute of Chemical Research of Catalonia (ICIQ), Barcelona Institute of Science and Technology (BIST)*)

E1.2.3-12 Understanding photocatalytic reactivity

16:30 - 16:45 Stefano Trocino (*Institute for Advanced Energy Technologies "Nicola Giordano" (ITAE) - National Research Council (CNR), Via Salita S. Lucia sopra Contesse, n. 5, Messina, 98126, Italy*)

E1.2.3-03 Design and validation of a 10 cm² tandem photoelectrochemical prototype for water splitting using non-critical raw materials

16:45 - 16:55 **Closing E1**

20:00 - 22:00 **Social Dinner**

October 29th - Day 4 (Thursday)

17:15 - 18:00 **Plenary Session - Auditorium**

October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**

MATSUS Fall 2026 Conference (MATSUSFall26)

E2 Solar fuels and chemicals: from devices to discoveries in unconventional environments

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Franky Esteban Bedoya Lora, Katharina Brinkert and Anna Hankin

Conference Program

October 26th - Day 1 (Monday)	
08:45 - 10:30	Plenary Session - Auditorium
October 27th - Day 2 (Tuesday)	
17:10 - 18:00	Plenary Session - Auditorium
October 28th - Day 3 (Wednesday)	
20:00 - 22:00	Social Dinner
October 29th - Day 4 (Thursday)	
17:15 - 18:00	Plenary Session - Auditorium
18:00 - 19:30	Poster Session
October 30th - Day 5 (Friday)	
09:00 - 10:30	Plenary Session - Auditorium
11:10 - 11:15	Opening E2 - Room 11
	Session E2.1.1 Chair: Franky Esteban Bedoya Lora
11:15 - 11:30 E2.1.1-01	<u>George H. Creasey</u> (<i>Department of Chemical Engineering, Imperial College London, London SW7 2AZ, UK</i>) A scale-up-led approach to photoelectrochemical water splitting: from nanomaterials optimisation to field testing
11:30 - 12:00 E2.1.1-11	<u>Camilla Tossi</u> (<i>Center of Applied Space Technology and Microgravity (ZARM), University of Bremen, 28359 Bremen, Germany</i>) Synthesis of Rhodium Electrocatalyst Nanoparticles for Photoelectrochemical Water-Splitting in Microgravity
12:00 - 12:15 E2.1.1-02	<u>Diwakar Suresh Babu</u> (<i>Institute for Solar Fuels, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Hahn-Meitner-Platz 1, 14109 Berlin, Germany</i>) Interfacial Chemical Tuning of AlInP Surface Oxides for High-Performance III-V Artificial Leaves
12:15 - 12:45 E2.1.1-12	<u>Pau Farras</u> (<i>School of Biological and Chemical Sciences, Energy Research Cluster, Ryan Institute, University of Galway</i>) Perylene-based COFs as a template for size-controlling and localising Au and RuO ₂ NPs for light-driven CO ₂ reduction
12:45 - 15:00	Lunch Break
	session E2.1.2 Chair: Katharina Brinkert
15:00 - 15:30 E2.1.2-11	<u>Sonya Calnan</u> (<i>Wolfson School of Mechanical, Electrical and Manufacturing Engineering, Loughborough University, Loughborough, LE11 3TU, UK</i>) The Science and Engineering of Solar Energy for efficient Hydrogen (and Fuel) Production
15:30 - 16:00 E2.1.2-12	<u>Fatwa Firdaus Abdi</u> (<i>School of Energy and Environment, City University of Hong Kong, 83 Tat Chee Avenue, Kowloon, Hong Kong SAR, China</i>) Engineering elevated-pressure photoelectrochemical systems
16:00 - 16:30 E2.1.2-13	<u>Virgil Andrei</u> (<i>School of Materials Science and Engineering, Nanyang Technological University,</i>) Lead Halide Perovskite Photoelectrocatalysis for Solar Chemical Synthesis
16:30 - 16:40	Closing E2



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Materials for Sustainable
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MATSUS Fall 2026 Conference (MATSUSFall26) E3 Photonics in Energy Conversion Materials and Devices

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Miguel Alexandre, Catarina Ferreira and Guillermo Martínez-Denegri

Conference Program

October 26th - Day 1 (Monday)

08:45 - 10:30 **Plenary Session - Auditorium**

11:10 - 11:15 **Opening E3 - Room 10**

Session E3.1.1

Chair: Catarina Ferreira

- 11:15 - 11:45 Maria Lilli (*Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology (BIST), Barcelona, Spain*)
E3.1.1-11 Transparent nanodroplets-based composites for solar light transmittance modulation and conversion
- 11:45 - 12:15 Maria Jose Lo Faro (*Physics and Astronomy Department, University of Catania, S. Sofia 64, Catania I-95123, Italy*)
E3.1.1-12 Engineered Fractal Disorder for Light Management in Silicon Optoelectronics
- 12:15 - 12:30 Ona Segura Lecina (*Department of Electrical Engineering, Stanford University*)
E3.1.1-02 Toward Practical Solid-State Upconversion: Efficiency, Stability, and Deep NIR Harvesting in Bulk Heterojunction Architectures
- 12:30 - 12:45 Himanshu Phirke (*School of Physics and Astronomy, Faculty of Engineering and Physical Sciences, University of Southampton, Southampton, UK*)
E3.1.1-03 Optimizing External Quantum Efficiency in Scattering-Enhanced Perovskite QD Color-Conversion Films: A Rigorous Monte Carlo Approach
- 12:45 - 13:00 Asha Bhardwaj (*Indian Institute of Science, Bengaluru*)
E3.1.1-01 Nanoengineering of Quantum Dot-Quantum Wire Hybrid Heterostructures for High-Efficiency WLEDs

13:00 - 15:00 **Lunch Break**

Session E3.1.2

Chair: Guillermo Martínez-Denegri

- 15:00 - 15:30 Vivian Ferry (*Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN 55455, United States*)
E3.1.2-11 Large-area light management materials for photovoltaics and agrivoltaics
- 15:30 - 16:00 Paul Fassl (*Institute of Microstructure Technology (IMT), Karlsruhe Institute of Technology (KIT), Hermann-von-Helmholtz-Platz 1, 76344 Eggenstein-Leopoldshafen, Germany.*)
E3.1.2-12 From Photon Recycling to Light Management in Perovskite Photovoltaics
- 16:00 - 16:15 Daan Methorst (*AMOLF Institute Science Park 104, Amsterdam 1098XG, Netherlands.*)
E3.1.2-01 Carrier funneling and luminescent collimation for extreme diffuse light concentration.
- 16:15 - 16:30 Martina D'Andrea (*ICFO-Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology, Castelldefels, 08860 Barcelona, Spain*)
E3.1.2-02 Engineering Photonic Structures to Mitigate Radiative Losses and Enhance Open-Circuit Voltage in Inverted Perovskite Solar Cells
- 16:30 - 16:45 Robin Schot (*LMPV-Sustainable Energy Materials Department, AMOLF, Science Park 104, Amsterdam 1098 XG, The Netherlands*)
E3.1.2-03 Near-field effects on cathodoluminescence outcoupling in perovskite thin films
- 16:45 - 17:00 Cristina Teixeira (*CENIMAT/i3N, NOVA School of Science and Technology, Campus de Caparica, 2829-516, Caparica, Portugal*)
E3.1.2-04 Lead Mitigation Strategy: Highly Efficient Perovskite Solar Cells with Thin Absorbers Enabled by Nanophotonic Front-Contact Voids
- 17:00 - 17:15 Jaime Bueno (*Instituto de Ciencia de Materiales de Madrid, ICMM-CSIC, C/Sor Juana Inés de la Cruz, 3, Madrid, Spain*)
E3.1.2-05 Plasmon-Enhanced Perovskite Optoelectronics and Generative Inverse Design of Chiral Metasurfaces



October 27th - Day 2 (Tuesday)

Session E3.2.1

Chair: Miguel Alexandre

09:00 - 09:30	<u>Mariano Campoy Quiles</u> (<i>Institut de Ciència de Materials de Barcelona (ICMAB), CSIC, Carrer dels</i>
E3.2.1-11	<i>Til·lers sn, Bellaterra, 08193, Spain</i>) Multijunction lateral (Rainbow) solar cells based on organics and hybrid technologies
09:30 - 10:00	<u>Urs Aeberhard</u> (<i>Fluxim AG, 8400 Winterthur, Switzerland</i>)
E3.2.1-12	Simulation framework for the quantification of re-absorption effects in photovoltaic device applications
10:00 - 10:15	<u>Larissa Blom</u> (<i>AMOLF Institute Science Park 104, Amsterdam 1098XG, Netherlands.</i>)
E3.2.1-01	Multiple Light Scattering for Enhanced Light Trapping in Nanostructured Multi-Junction Solar Cells
10:15 - 10:30	<u>Hanifah Winarto</u> (<i>Solar Energy Division, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH,</i>
E3.2.1-02	<i>Germany</i>) Proof-of-concept of Periodic Inverted Micro-Pyramids for Fully Textured, Optically Optimized Solution-Processed Perovskite-Silicon Tandem Solar Cells
10:30 - 10:40	Closing E3
10:40 - 11:15	Coffee Break
17:10 - 18:00	Plenary Session - Auditorium
18:00 - 19:30	Poster Session

October 28th - Day 3 (Wednesday)

20:00 - 22:00 **Social Dinner**

October 29th - Day 4 (Thursday)

17:15 - 18:00 **Plenary Session - Auditorium**

October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**

MATSUS Fall 2026 Conference (MATSUSFall26)

E4 Advances and Innovations in (Photo)Electrochemical CO₂ and N₂ Conversion and Water Splitting

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Guillermo Díaz-Sainz, Mingchuan Luo and Juqin Zeng

Conference Program

October 26th - Day 1 (Monday)	
08:45 - 10:30 Plenary Session - Auditorium	
11:10 - 11:15 Opening E4 - Room 11	
	Session E4.1.1 Chair: Sudhagar Pitchaimuthu
11:15 - 11:45 E4.1.1-11	<u>Sara Realista</u> (<i>Centro de Química Estrutural, Institute of Molecular Sciences, Departamento de Química e Bioquímica, Faculdade de Ciências, Universidade de Lisboa, Campo Grande, Ed. C8, 1749-016 Lisboa, Portugal</i>) MOF-Based Materials at Work: Electrocatalytic CO ₂ Conversion
11:45 - 12:00 E4.1.1-01	<u>Mitra BagheriKerachi</u> (<i>Dipartimento di scienze applicate e tecnologia, Politecnico di Torino, Corso Duca degli Abruzzi 24, 10129 Torino, Italy</i>) Interface-Engineered Ni ₃ S ₂ on N-Doped Mesoporous Carbon for Highly Selective and Stable CO ₂ Reduction
12:00 - 12:15 E4.1.1-02	<u>Jun Tae Song</u> (<i>Department of Applied Chemistry, Kyushu University</i>) Interfacial Microenvironment Engineering Using Zr-Based Materials for High-Rate CO ₂ Electroreduction
12:15 - 12:45 E4.1.1-12	<u>Cátia Azenha</u> (<i>LEPABE - Laboratory for Process Engineering, Environment, Biotechnology and Energy, ALiCE - Associate Laboratory in Chemical Engineering, Faculty of Engineering, University of Porto, Rua Dr. Roberto Frias, 4200-465 Porto, Portugal</i>) Dynamic in situ tuning of syngas selectivity via potential-cycling over bimetallic Cu ₂ O/ZnO catalysts for tailored downstream C1 chemistry integration
12:45 - 13:00 E4.1.1-03	<u>Alexandre H. Martins</u> (<i>Centro de Química Estrutural, Institute of Molecular Sciences, Departamento de Química e Bioquímica, Faculdade de Ciências, Universidade de Lisboa, Campo Grande, Ed. C8, 1749-016 Lisboa, Portugal</i>) Synthesis and post-synthetic modification of Cu-based coordination polymers for CO ₂ electrocatalysis
13:00 - 15:00 Lunch Break	
	Session E4.1.2 Chair: Sara Realista
15:00 - 15:30 E4.1.2-11	<u>Roberto Fiorenza</u> (<i>Department of Chemical Sciences, University of Catania, Italy</i>) Solar photothermal-catalysis for the CO ₂ valorization and the air putification
15:30 - 16:00 E4.1.2-12	<u>Praveen Kumar</u> (<i>Faculty of Chemistry and Chemical Technology University of Ljubljana, 1000 Ljubljana, Slovenia</i>) Sustainable Catalyst Design for the conversion of CO ₂ into Organic Carbonates
16:00 - 16:15 E4.1.2-01	<u>Cecilia Daniela Costa</u> (<i>Center for Sustainable Future Technologies, Istituto Italiano di Tecnologia, Via Livorno 60, Torino, 10144 Italy</i>) Mechanochemically tuned ZnO/ZIF-8 composites for CO ₂ RR
16:15 - 16:45 E4.1.2-13	<u>Damien Voiry</u> (<i>Institut Européen des Membranes, IEM, UMR 5635, Université de Montpellier, ENSCM, CNRS, Montpellier 34000, France</i>) Hydrogen Bond Network Disruption Enables Efficient Direct Reactive Capture of CO ₂ from Flue Gas
16:45 - 17:15 E4.1.2-14	<u>Francesca Risplendi</u> (<i>Department of Applied Science and Technology, Politecnico di Torino, corso Duca degli Abruzzi 24, 10129 Torino, Italy</i>) From Selective CO Production to C-C Coupling: An Integrated Computational Framework for CO ₂ Electroreduction Catalyst Design



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October 27th - Day 2 (Tuesday)

Session E4.2.1

Chair: Roberto Fiorenza

09:00 - 09:30 Avni Guruj (*Flemish Institute for Technological Research (VITO)*)

E4.2.1-11 Innovations in CO₂ electroconversion to formic acid: Synergistic Bi-Sn Catalysis and Advanced Three-Compartment Reactor Engineering

09:30 - 09:45 Adriana Rioja Cabanillas (*TNO SPES*)

E4.2.1-01 Development of GDE-Based Electrolyzers for CO₂ Reduction to Formate

09:45 - 10:00 Guillermo Díaz-Sainz (*Departamento de Ingenierías Química y Biomolecular, Universidad de Cantabria, Avenida de los Castros s/n, Santander, 39005, Spain*)

E4.2.1-02 Design and Demonstration of an Integrated CO₂ Capture and Electrochemical Conversion platform for Cement Plant Decarbonization

10:00 - 10:30 Grazia Leonzio (*Department of Mechanical, Chemical and Materials Engineering, University of Cagliari, via Marengo 2, 09123 Cagliari, Italy*)

E4.2.1-12 Towards ethylene production from carbon dioxide: Economic and global warming potential assessment

10:30 - 11:15 **Coffee Break**

Session E4.2.2

Chair: Cátia Azenha

11:15 - 11:45 Sven Brückner (*Technische Universität Berlin, Straße des 17. Juni 124 - 10623, Berlin - Germany*)

E4.2.2-11 Electrode and interface design aspects for efficient and scalable one-gap and zero-gap CO₂ electrolyzers

11:45 - 12:15 Sudhagar Pitchaimuthu (*School of Engineering and Physical Sciences, Heriot-Watt University*)

E4.2.2-12 Co-Electrolysis of Greywater for Sustainable Hydrogen Generation Using Nanoscale Electrocatalysts

12:15 - 12:45 Soma Vesztergom (*Eötvös Loránd University (ELTE)*)

E4.2.2-13 Adaptive IR Compensation and Multi-Nodal Electrometry Control Concepts for Electrolysers: An Instrumentation Roadmap

12:45 - 12:55 **Closing E4**

17:10 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**



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October 28th - Day 3 (Wednesday)

20:00 - 22:00 **Social Dinner**

October 29th - Day 4 (Thursday)

17:15 - 18:00 **Plenary Session - Auditorium**

October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**

MATSUS Fall 2026 Conference (MATSUSFall26)

E5 From Materials Innovation to Sustainable Photo-Assisted Electrochemical Systems

Palma, Spain, 2026 October 26th - 30th

Conference Chairs: Teresa Gatti and Isabella Poli

Conference Program

October 26th - Day 1 (Monday)	
08:45 - 10:30	Plenary Session - Auditorium
October 27th - Day 2 (Tuesday)	
17:10 - 18:00	Plenary Session - Auditorium
October 28th - Day 3 (Wednesday)	
20:00 - 22:00	Social Dinner
October 29th - Day 4 (Thursday)	
08:55 - 09:00	Opening E5 - Room 11
	Session E5.1.1 Chair: Isabella Poli
09:00 - 09:30	<u>Salvador Eslava</u> (<i>Department of Chemical Engineering, Imperial College London, Imperial College Rd, South Kensington, London SW7 2AZ, United Kingdom</i>) Organic and Halide Perovskite Integrated (Photo)Electrodes for Solar Hydrogen Production
E5.1.1-I1	
09:30 - 09:45	<u>Valentina Gacha</u> (<i>ICFO-Institut de Ciències Fotòniques, The Barcelona Institute of Science and Technology, Castelldefels, Barcelona, 08860, Spain</i>) Advancing Photoelectrochemical Water Splitting: Light Management to Enhance BiVO ₄ Photoanode Performance
E5.1.1-O1	
09:45 - 10:00	<u>Micaela Pozzati</u> (<i>Department of Applied Science and Technology (DISAT), Politecnico di Torino, 10129 Torino, Italy</i>) MXene-MODIFIED BiVO ₄ /FePO ₄ PHOTOANODES For SOLAR OXYGEN EVOLUTION
E5.1.1-O2	
10:00 - 10:30	<u>Ainhua Cots</u> (<i>Leitat Technological Center, c/ de la Innovació 2, 08225 Terrassa, Spain</i>) Advancing Photoelectrochemical Technologies towards Real-World Sustainable Chemical Production
E5.1.1-I2	
10:30 - 11:15	Coffee Break
	Session E5.1.2 Chair: Salvador Eslava
11:15 - 11:45	<u>Lorenzo Malavasi</u> (<i>Department of Chemistry and INSTM, University of Pavia, Via T. Taramelli 1,4, 27100 Pavia, Italy</i>) Materials Engineering and Mechanistic Understanding of Metal Halides for Solar Fuel Photogeneration
E5.1.2-I1	
11:45 - 12:00	<u>Elena Chulanova</u> (<i>Department of Chemistry, University of Oxford, 12 Mansfield Road, Oxford, OX1 3TA, UK</i>) BODIPY-Based Supramolecular Catalysts for CO ₂ Reduction
E5.1.2-O1	
12:00 - 12:15	<u>Sara Domenici</u> (<i>Department of Applied Science and Technology, Politecnico di Torino, corso Duca degli Abruzzi 24, 10129 Torino, Italy</i>) Structure-Property-Performance Relationships in Low Band-Gap AgBiS ₂ Photoanodes
E5.1.2-O2	
12:15 - 12:45	<u>Sandheep Ravishankar</u> (<i>Forschungszentrum Jülich GmbH, Institute of Energy Materials and Devices - Photovoltaik (IMD-3), Immerwahrstraße 2, 91058 Erlangen, Germany</i>) Determination of Electron Extraction in Semiconductor Photoanodes: Steady-State and Small-Perturbation Response
E5.1.2-I2	
12:45 - 13:00	<u>Miguel García-Tecedor</u> (<i>Photoactivated Processes Unit, IMDEA Energy Institute, Avda. Ramón de la Sagra 3, 28935 Móstoles, Madrid, Spain</i>) Charge-Carrier Dynamics in Transition-Metal-Modified BiVO ₄ Photoanodes
E5.1.2-O3	



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13:00 - 13:30 Stefano CARAMORI (*University of Ferrara, Dept. of Chemical, Pharmaceutical and Agricultural*

E5.1.2-I3 *Sciences, Ferrara, Italy*)

MXene-modified Hematite photoanodes

13:30 - 15:00 **Lunch Break**

E5.1.3

Chair: Teresa Gatti

15:00 - 15:30 Paula Dias (*LEPABE - Laboratory for Process Engineering, Environment, Biotechnology and Energy,*

E5.1.3-I1 *ALiCE - Associate Laboratory in Chemical Engineering, Faculty of Engineering, University of Porto, Rua Dr. Roberto Frias, 4200-465 Porto, Portugal*)

Advancing Solar Energy Storage: From Photoelectrodes Engineering to Photoelectrochemical Cell Upscaling

15:30 - 15:45 Irene Martin (*Department of Applied Science and Technology, Politecnico di Torino, corso Duca degli*

E5.1.3-O1 *Abruzzi 24, 10129 Torino, Italy*)

Investigation of doped metal oxide nanocrystals as bifunctional material for 2-terminal photocapacitors

15:45 - 16:00 Mariam Barawi Moran (*IMDEA Energy*)

E5.1.3-O2 Engineering Hybrid Interfaces with Conjugated Porous Polymers for Solar Energy Conversion

16:00 - 16:30 Edoardo Mosconi (*Computational Laboratory for Hybrid/Organic Photovoltaics (CLHYO), Istituto CNR di*

E5.1.3-I2 *Scienze e Tecnologie Chimiche "Giulio Natta" (CNR-SCITEC), Via Elce di Sotto 8, 06123 Perugia, Italy.*)

Computational Modeling of New Generation Materials for Photovoltaics and Catalysis

16:30 - 17:00 Roland Marschall (*Physical Chemistry III, University of Bayreuth, 95447 Bayreuth, Germany*)

E5.1.3-I3 Nanostructured photoelectrodes for solar energy conversion

17:00 - 17:10 **Closing E5**

17:15 - 18:00 **Plenary Session - Auditorium**

18:00 - 19:30 **Poster Session**



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October 30th - Day 5 (Friday)

09:00 - 10:30 **Plenary Session - Auditorium**

MATSUS Fall 2026 Conference (MATSUSFall26)

Plenary Session

Palma, Spain, 2026 October 26th - 30th

Conference Chair:

Conference Program

October 26th - Day 1 (Monday)
08:45 - 10:30 Plenary Session - Auditorium
October 27th - Day 2 (Tuesday)
17:10 - 18:00 Plenary Session - Auditorium
October 28th - Day 3 (Wednesday)
20:00 - 22:00 Social Dinner
October 29th - Day 4 (Thursday)
17:15 - 18:00 Plenary Session - Auditorium
October 30th - Day 5 (Friday)
09:00 - 10:30 Plenary Session - Auditorium