

INNOVATIVE MATERIALS FOR ENERGY THIRD EDITION



DAY 1 - 30th September (Aula Magna Rettorato, Plesso Centrale)

09:00 - 09:30 Opening and welcome addresses

SESSION 1: Next generation Perovskite solar cells

09:30 -10:00 Introductory talk: Maria Antonietta Loi - University of Groningen, The Netherlands (<u>Sn-based perovskites challenges and opportunities</u>)

10:00 -10:20 Michele Saba – University of Cagliari, Cagliari, Italy (<u>A new photophysics for 2D and 3D lead halide perovskites: Polaron plasma in equilibrium with bright excitons</u>)

10:20 -10:40 Silvia Colella – University of Salento, Lecce, Italy (<u>Chemical insights into perovskite ink stability</u>)

10:40 - 11:00 Giulio Cerullo – Politecnico di Milano, Milano, Italy (<u>Ultrafast spectroscopy of natural and artificial light-harvesting</u>)

11:00 -11:20 Antonio Agresti – University of Rome Tor Vergata, Rome, Italy (<u>Progresses and challenges in perovskite technology development: the role of 2D materials</u>)

11:20 -11:40 Break

SESSION 2: Photo(electro)catalytic advanced solutions for solar to chemical energy conversion

11:40 -12:10 Introductory talk: José Ramón Galán-Mascarós – Institute of Chemical Research of Catalonia, Spain (<u>Photo(electro)catalytic advanced solutions for solar to chemical energy conversion</u>)

12:10 -12:30 Stefano Agnoli – University of Padova, Padova, Italy (<u>A direct look at the hydrogen evolution reaction with EC-STM: visualisation of active sites and evaluation of catalytic activity with atomic scale precision)</u>

12:30 -12:50 Elena Selli – Politecnico di Torino, Torino, Italy (<u>Ternary oxide semiconductorbased materials for solar energy conversion</u>)

12:50 -14:30 Lunch

SESSION 3: Emerging technologies for green hydrogen and derivates (e-ammonia and e-methanol)

14:30 -15:00 Introductory talk: Maximilian Fleischer – Siemens Energy, Munich, Germany (<u>The need for chemical storage materials in the energy system of the future</u>)

15:00 -15:20 Salvatore Scirè – University of Catania, Catania, Italy (<u>Laser-treated titania</u> and ceria photocatalysts for green hydrogen production)

15:20 -15:50 Federico Bella – Politecnico di Torino, Torino, Italy (<u>Lithium-mediated approaches for sun-powered ammonia electrosynthesis</u>)

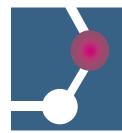
15:50-16:10 Break

SESSION 4: Innovative solutions for a renewable energy value chain

16:10 -16:30 Carina Faber – Engie Laborelec, Linkebeek, Belgium (<u>Alternative fuels and chemicals</u> – with materials science from renewable electricity, CO2 and water up to the <u>final product</u>)

16:30 -17:00 Pedro Gómez Romero - Catalan Institute of Nanoscience and Nanotechnology, Barcelona, Spain (<u>To flow or not to flow. Great challenges for large-scale energy storage</u>)

17:00 - 17:30 Silvia Bodoardo - Politecnico di Torino, Torino, Italy (<u>Advanced materials for European Li-ion batteries</u>)



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DAY 2 - 1st October (Aula Magna Vittorio Ricevuto, Polo Papardo)

SESSION 5: Solar Photovoltaics: where are we heading?

09:30 -10:00 Introductory talk: Cosimo Gerardi – Enel Green Power, Catania, Italy (Innovative photovoltaic technologies to reduce electricity costs)

10:00 - 10:20 Francesco Matteucci – European Innovation Council, Bruxelles, Belgium (*EIC* portfolio and hands on approach to facilitate the materials for energy innovation journey)

10:20 -10:40 Jean Rousset – Institut PV d'Ile de France, Paris, France (<u>Fabrication of large scale perovskite device by the slot-die coating method</u>)

10:40 -11:00 Samuel Stranks – University of Cambridge, Cambridge, United Kingdom (<u>Halide perovskites for next-generation photovoltaics: challenges on the atomic to the module level</u>)

11:00 -11:20 Break

RoundTable session: Catalysing the energies to accelerate the energy transition

11:20 -11:30 Brief introduction of the arguments of the roundtable discussion

11:30 -13:00 Panel discussion

All participants (academics, business leaders, stakeholders) will discuss together to collaboratively answer the question: how do you capitalize on knowledge and know-how to deliver a sustainable energy transition?

- 1. Renewable Energy Roadmap and perspectives of the energy transition in the PNRR recovery plan
- Introduced by Francesco Basile University of Bologna, Bologna, Italy
- 2. Issues and challenges of innovative materials in energy transition Introduced by Aldo di Carlo CNR-ISM/University of Rome Tor Vergata, Rome, Italy
- **3.** New alliances and improved cooperation for a competitive country-level energy transition succession

Introduced by Antonino Salvatore Aricò – CNR ITAE, Messina, Italy

- **4.** Cooperation vs competition in a European Context Introduced by Francesco Matteucci European Innovation Council, Bruxelles, Belgium.
- **5.** The role of regional level

Introduced by Antonio Martini – Assessorato Regionale dell'Energia, Palermo, Italy

- 13:00 -13:20 Wrap-up of round-table indications by organizers
- 13:20 -14:40 Lunch