

2025

# NEWS ARCHIVE

of the Center for Sustainable Energy

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21 JANUARY 2025

## Luigi Crema at JUST-GREEN AFRH2ICA Stakeholders' Event



JUST GREEN AFRH2ICA is a Clean Hydrogen Partnership project that aims to develop a *Green Hydrogen Just Transition Roadmap* that would make African-European transition pathways to H2 synergic, sustainable and avoiding any “Africa hydrogen colonization”, but promoting a mutual benefit collaboration of the two continents towards the development of independent and collaborative hydrogen economies, R&D ecosystem and value chains.

Africa has a unique potential to exploit low cost renewable energy to produce green hydrogen for domestic and external markets. Green Hydrogen could become indeed the booster of a sustainable developmen

of the continent, enabling African countries to reduce their environmental impact as well as to make them less dependent to fossil fuels which can create geopolitical issues too. African green hydrogen development could be helpful for European hydrogen transition, that's why it's important that both EU and AU hydrogen policies and development roadmaps are conceived in a cross-fertilizing way.

On January 15 and 16, the project organised in Rabat (Morocco) the final events of the project:

- a Training event which is an important opportunity to share knowledge, develop new skills and stimulate in-depth reflection on various topics, thanks to the participation of industry experts who will discuss the latest trends, technologies and applications of green hydrogen.
- a Stakeholder event where local, national and EU authorities discussed with stakeholders from the private sector on the importance of a strategy for the collaboration between Italy, Europe and Africa when creating a hydrogen market.

More on the project: <https://just-green-afrh2ica.eu/about>

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27 JANUARY 2025

## Luigi Crema at the EU-Italy Energy Days

From 23 to 24 January 2025, the 2nd edition of this International Symposium entitled "How to Achieve Near-Zero Emissions by 2050" took place at Castello del Valentino, in Turin. The program featured international experts from academia, industry and policymakers in critical discussions on topical issues, such as nuclear energy, hydrogen and CCS technologies, alternative fuels for transportation and renewable energy.

Our Director participated in the event as invited speakers, in his role of H2IT Vice-President. Luigi Crema took part in the discussion on the implementation of the National Hydrogen Strategy in Italy and on the development of synergies between the Hydrogen and CCS sectors in Italy in the Roundtable Nr. 2 Implementation of National Hydrogen and CCS Strategies.

More information: <https://www.eu-it-energydays.it/>

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30 JANUARY 2025

## REMEDHYS Project kicks off to revolutionize hydrogen storage

*The REMEDHYS project, a bold initiative to reshape hydrogen storage technology, officially begins on 22 January 2025 in Norway. This innovative project will develop solid-state hydrogen storage solutions using metal hydrides, providing a compact, safe, and sustainable alternative to traditional compressed and liquid hydrogen methods.*

### REMEDHYS Concept

REMEDHYS (*Recycled Metals for Aboveground Hydrogen Storage*) focuses on solid-state hydrogen storage using metal hydrides (MHs). This technology chemically binds hydrogen to metals, enabling storage of hydrogen at low pressure (<50 bar) and ambient temperature, ensuring enhanced safety while minimizing infrastructure requirements. By using recycled metals sourced within Europe, REMEDHYS also supports the EU's push for circular economy practices and reduced reliance on imported raw materials.

*"REMEDHYS is an exciting step forward in sustainable hydrogen storage. We're bringing innovative technology to the market while aligning with Europe's climate goals,"* says Stefano Deledda, Project Coordinator.

Compared to traditional compressed or liquefied hydrogen storage, the MH approach offers significant advantages:

- Enhanced safety by reducing risks of sudden hydrogen release.
- Improved efficiency through integration with waste heat sources.
- Smaller footprint with reduced safety distances and infrastructure requirements.

The use of recycled starting materials for the production of the hydrogen storing alloys is expected to significantly reduce the investments costs of hydrogen storage units based on MHs, making them competitive with compressed and liquid hydrogen storage technologies.

### Real-World Impact and Applications

The project aims to demonstrate the feasibility of large-scale aboveground hydrogen storage for diverse markets, including transportation and industrial applications. By showcasing its modular and scalable technology, REMEDHYS will support Europe's transition to renewable energy while reducing reliance on imported raw materials.

### Real-World Validation in Cuxhaven, Germany

The project's modular hydrogen storage system, with a capacity of 100 kg and a density of 40 kgH<sub>2</sub>/m<sup>3</sup>, will be validated at an operational hydrogen production site in Cuxhaven. It will be integrated with a 2 MW PEM electrolyzer, supplying hydrogen to the Coastal Liberty, an offshore service vessel. This large-scale demonstration will establish the system's viability for broader applications, including ports, heavy transport, and industrial use.

### Collaboration and Expertise

REMEDHYS is a collaboration of top-tier European research institutions and industry leaders. The consortium includes four research centers (IFE, HEREON, CNRS, FBK), two universities (UNITO, UPEC), and four industrial partners (POMETON, SMAB, METHYDOR, INGENION). Together, they bring expertise in chemistry, engineering, and energy systems to deliver innovative solutions for hydrogen storage.

**The involvement of FBK**

"The Kick off meeting of the REMEDHYS project, managed by the Norwegian partners IFE, was an exciting experience" says the researcher Michele Bolognese, who continues explaining the role of FBK in the project and reports that "FBK will actively participate in Work Package 8, which focuses on system design and specifications. This project, which directly follows the HyCARE project on Metal Hydride (MH) Hydrogen storage, will personally offer a great opportunity to engage in discussions on steady-state and dynamic simulation activities for optimizing the control strategy of the MH Balance of Plant coupled with 2 PEM electrolyzers in Cuxhaven".

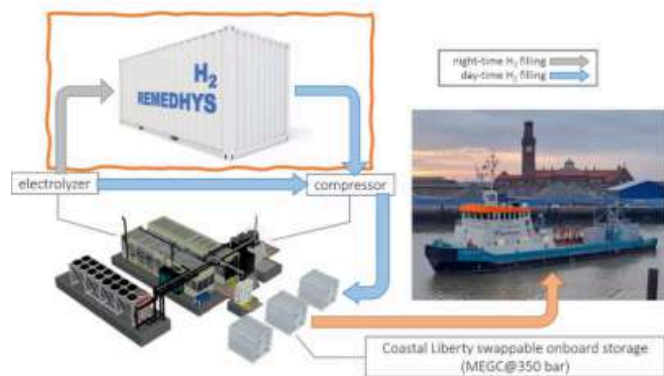
In the meeting participated also the Head of HyRES Unit Matteo Testi, who underlines that "the HyRES unit is glad to be part of this novel R&D activity on hydrogen storage, particularly metal hydride, which is an active research line in the Sustainable Energy Centre" and outlines that "metal hydride technology will play a relevant role in the overall supply chain of H<sub>2</sub>, supporting a reduction of cost and of the plant's complexity and guaranteeing a strong European leadership on the topic".

Link to the Coordinator's website: <https://ife.no/en/press-release-remedhys-project-kicks-off-to-revolutionize-hydrogen-storage/>  
 Press release [at this link](#)

REMEDHYS Project has received funding from the European Union Horizon Europe Research and Innovation program under grant agreement No. 101192503. The project is supported by the Clean Hydrogen Partnership and its members.



REMEDHYS kick off meeting, 22-23.01.2025, Norway  
 (Source: IFE)



REMEDHYS concept (Source: IFE)

07 FEBRUARY 2025

**FBK at the Kick-off of Europe's First Hydrogen Valley for Industry!**

On February 3, Europe's first hydrogen valley focused on industrial applications in Styria, Upper Austria, and Carinthia was launched. With 48 national and international partners, the project is set to invest €588 million by 2030 to drive decarbonization and strengthen the leadership in hydrogen research.

The H<sub>2</sub> Valley project will establish a large-scale renewable hydrogen (H<sub>2</sub>) economy in the Austrian industrial regions of Upper Austria, Styria and Carinthia, directly contributing to the goals outlined in the European Green Deal, REPower EU and Hydrogen Strategy. The project will achieve this by decarbonising key sectors through H<sub>2</sub>, drastically reducing emissions in the steel, chemical, and cement industries as well as in energy and mobility via displacement of fossil fuels – including reducing the reliance on natural gas which Austria overwhelmingly imports from Russia.

With 13,000 tons of green hydrogen being needed in the regions by 2028, over 10,000 tpy of green hydrogen will be produced within this H<sub>2</sub> Valley. By introducing strategically placed, decentralised H<sub>2</sub> production facilities, the project will strengthen the country's energy resilience and flexibility and create a robust domestic market for green H<sub>2</sub>.

### Key Highlights:

- 101 MW new electrolysis plants
- 10,000 tonnes of green hydrogen per year
- 17 projects covering the entire H2 value chain

The HI2 Valley will play a crucial role in bridging the gap between Southern and Eastern European hydrogen supply corridors. Being embedded on the European Hydrogen Backbone and TEN-T network and future pipeline connections (PCIs) with Southern Europe and North Africa, the HI2 Valley will seamlessly connect Austria's multi-user H2 ecosystem with neighbouring countries like Germany, Italy and Slovakia, fostering a truly interconnected Central European hydrogen network. This role model helps to secure industrial jobs, and through standardisation and integration brings costs of hydrogen down, creating a green industrial future for Europe.

The HI2 Valley will create 1,000 jobs and contribute significantly to the decarbonization of energy-intensive industries. Going beyond its immediate neighbours, the HI2 Valley will also foster knowledge sharing and wider adoption of green hydrogen through the active collaboration with five other emerging Hydrogen Valleys in Eastern Europe in Poland, Romania, Hungary, Latvia, and the Czech Republic.

### The involvement of FBK

FBK, through the Center for Sustainable Energy, will lead the package of activities called "Scaling Up and Replication" and which focuses on expanding hydrogen production and utilization within Austria towards 2040, replicating the hydrogen valley model in other European countries, and establishing international hydrogen valley interconnections. Additionally, FBK is responsible for monitoring Greenhouse Gas (GHG) emissions and managing Guarantees of Origin (GOs).

The Center SE will also be involved in the development of the digital twin, as well as safety planning and management. Last but not least, FBK plays a key role in environmental impact assessments, including Life Cycle Assessment (LCA) and Life Cycle Cost (LCC), while working to enhance the resource efficiency of the Hydrogen Valley.

The researcher **Yasaman Nosrat Tajoddin** participated in the launch of the project together with the Head of HyRES Unit **Matteo Testi** who reports that *"FBK is thrilled to be part of the HI2 project, a crucial step towards realizing the potential of hydrogen as a clean energy carrier. We are confident that our contributions will be essential in overcoming technical challenges and accelerating the deployment of hydrogen technologies."*

The project is supported by the Clean Hydrogen Partnership and its members.



Launch event of the HI2 Valley - 3.02.2025 - Graz, Austria  
(Source: International Cleantech Network/HI2 Valley)



Representative of the HI2 Valley Consortium (Source: International Cleantech Network/HI2 Valley)

11 FEBRUARY 2025

## HERMES launched!

Last 21st of January, **Luca Praticò** and **Matteo Testi** attended the kickoff meeting of the HERMES project in Bilbao (Spain).

HERMES is developing next-generation membrane technologies to make hydrogen purification more efficient and cost-effective. By tackling energy consumption and scalability, we're helping hydrogen become a cornerstone of industrial sustainability. With 7 partners from 4 countries, we're advancing hydrogen separation and purification technologies through cutting-edge membrane innovations.

FBK will support the consortium in conducting a preliminary hazard analysis of the two prototypes of the project, analyzing preventively the safety of these systems during the design phase. Furthermore, FBK will conduct a performance analysis of the membranes regarding economic and sustainability aspects. A complete techno-economic assessment of the purification and separation system for hydrogen will be carried out. Moreover, the two systems will be evaluated for the whole life cycle in terms of sustainability.

**Luca Praticò** reported that *"the kick-off meeting of the HERMES project managed by H2site was an exciting experience, meeting all the partners and visiting the H2site production sites with their advanced membrane technology that is essential for hydrogen ecosystems"*.

*"We are excited to be part of the HERMES project, which is crucial for unlocking the full potential of hydrogen as a clean energy carrier,"* said **Matteo Testi**, head of the HYRES unit in FBK. *"Purification with compression and metrology is considered a key enabling technology for deploying the hydrogen economy, contributing to ensuring a reliable connection in the overall H2 supply chains"*.

Have a look at the video [at this link](#)



13 FEBRUARY 2025

## The first Italian hydrogen train has arrived at the new maintenance and refueling plant in Rovato!

The Center for Sustainable Energy of FBK couldn't miss the event!

Our Director and Vice-President of H2IT Luigi Crema, with the researchers Simone Zottele and Alberto Vacilotto participated in the visit organized by Alstom Group which was held today.

The convoy arrived recently in the Brescia area from the test circuit of the Alstom site in Germany. Built by FERROVIENORD and equipped with cutting-edge equipment, the Rovato plant will be the first Italian depot specifically designed and built for the maintenance of hydrogen trains, and the first plant for refueling hydrogen for trains.

The train was built in the context of the H2iseO project, which aims to create the first Italian Hydrogen Valley in the Brescia area.



Promoted by FNM, FERROVIENORD and Trenord, with the involvement of SAPIO as a hydrogen supplier, the H2iseO project has the objective of developing an economic and industrial hydrogen supply chain in Valcamonica, starting from the mobility sector, contributing to the decarbonisation of a significant part of local public transport. This is a highly innovative project, which involves, among other things, the construction of 3 hydrogen production, storage and distribution plants (in Brescia, Iseo and Edolo), as well as the train maintenance and refueling plant in Rovato.

28 FEBRUARY 2025

## Gionata Luca presents the pilot site of Valle di Primiero to COMMUNITAS

From 18 to 20 February 2025, our researcher Gionata Luca was in Crevillente (Spain) to participate in the General Assembly of COMMUNITAS Project where he represented the leading pilot site of Valle di Primiero.

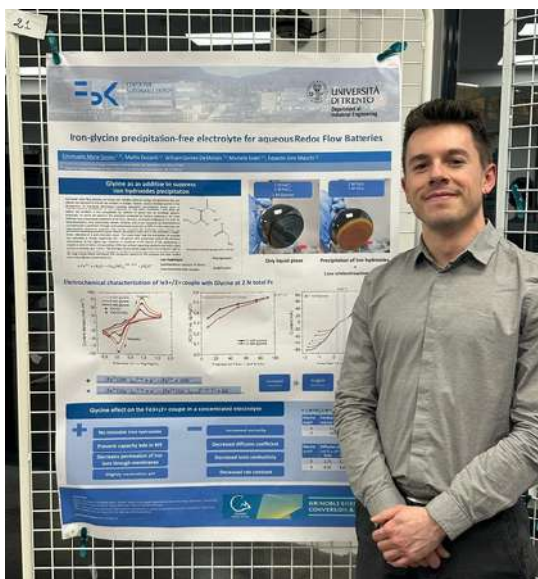
The meeting gathered all the representatives of the pilot sites who presented the current status. Among them, Gionata presented the current situation in the Italian pilot site and all the updates that have occurred in these first two years of the project, which started in January 2023. Starting with a brief overview of the history of the pilot site, Gionata then focused on all the installations of renewable energy plants that have led it to be a 100% renewable territory.

Throughout 2024 many steps were taken within the project, including a part of social engagement for the involvement of citizens and transfer of knowledge on the topic of energy communities, collaboration with the project partners for the development of COMMUNITAS tools, management and sharing of Primiero data and the installation of devices such as smart meters for the control of consumption within some homes that are part of the project, with the aim of optimizing the use of energy by citizens.

But, what is next? There are some crucial steps to be taken in 2025. In fact, it is now time for the deployment and demonstration of COMMUNITAS tools within the Primiero pilot site: the energy resource planner, power grid evaluator and optimizer, and demand response tool. Stay tuned!

5 MARCH 2025

## Emanuele M. Groiss presents a poster at ENGINE2025



During the last week of February, the fourth edition of the grE noble eNERgy conversioN & storagE (ENGINE2025) school took place in Grenoble.

"It has been a great experience" reported Emanuele Maria Groiss "I had the opportunity to meet high-level and very experienced professors and colleagues, with whom I hope to collaborate in the future".

The school offered a theoretical and practical training related to electrochemistry for energy applications across all relevant length scales (from local to bulk) and considering their reuses.

For its 4th edition, ENGINE2025 offered courses in electrochemistry, topical and invited seminars from academic and industrial partners, and visits of the ESRF synchrotron X-ray source & ILL neutron reactor with talks from beamline scientists.

Emanuele Maria Groiss, PhD student at the University of Trento / Fondazione Bruno Kessler participated in the school and presented a poster entitled "Iron-glycine precipitation-free electrolyte for Redox Flow Batteries".

6 MARCH 2025

## The European Commission awards the SYRIUS project: A step forward for hydrogen in steelmaking

EU CORE Consulting and Politecnico di Milano officially launched the Horizon Europe SYRIUS project, "SOEC HYDROGEN INTEGRATION AND CIRCULAR USE IN STEELMAKING PROCESS", during the Kick-off Meeting hosted on 26th and 27th of February by the project partner Acciai Speciali Terni Spa.

Our researchers Elena Crespi and Michele Bolognese participated in the meeting. "The main objective of the project is to demonstrate how the integration of a solid oxide electrolysis system within a steel mill can contribute to the decarbonization of steel production." explains Elena Crespi "FBK's activity, linked to the modeling and simulation of the dynamic behavior of the system, will contribute to the optimization of the electrolyzer's operating strategy, an important aspect in minimizing operating costs and degradation."

### What makes SYRIUS a turning point?

With € 10 million grant and less than five years' timeline, SYRIUS will contribute to support the steel sector by demonstrating the integration of a 4.2 MWe Solid Oxide Electrolysis Cell (SOEC) into a real Electric Arc Furnace (EAF) plant. This SOEC will produce 100 kg/h of green hydrogen, which will contribute to feeding a fuel flexible 280 tsteel/h - 84 MWth slab reheating furnace.

The electrolyser will be operated synergically with the furnace, the hydrogen storage, the steel plant shiftable/sheddable loads and two virtually aggregated solar PV plants, all managed by an advanced Energy Management System (EMS).

This action will demonstrate operational flexibility and high efficiency of SOEC electrolyzers and the CO<sub>2</sub> savings achievable by substituting fossil fuels with hydrogen and optimally operating a PV-based steel plant.

SYRIUS also sets industrial circularity at the project core by generating steam for the SOEC through furnace off-gas heat recovery, implementing by-product oxygen recovery in the furnace and analysing options for water recycling.

The action is expected to reduce the steel reheating process CO<sub>2</sub> emissions by 5,600 tonnes per year during the project.

**Fondazione Bruno Kessler** will enrich the consortium with the multidisciplinary expertise of the Center for Sustainable Energy, which will focus on technical activities mainly related to the development of a dynamic model of the plant and of a digital twin of the SOEC system, and will lead the activities on the dissemination of research results.

Read the press release in English [at this link](#)

Read the press release in Italian [at this link](#)



14 MARCH 2025

## **Gloria Gottardi program committee member and session chair at the international conference “ALD FOR INDUSTRY”**

Atomic Layer Deposition (ALD) is a highly precise thin-film deposition technique that allows the creation of ultra-thin, conformal coatings at the atomic level. By alternately introducing gaseous precursors, the process ensures that each layer is deposited one atomic layer at a time, allowing for exceptional control over film thickness and uniformity. This makes ALD particularly useful for applications requiring high precision, such as in the semiconductor industry, coatings for energy devices, and nano-materials fabrication.

For these reasons, it is increasingly used in next-generation batteries - where it enables the deposition of thin, uniform layers on electrodes to enhance performance, cycle life, and stability - and in hydrogen production technologies, where ALD plays a critical role in creating precise catalytic surfaces for water splitting reactions, improving efficiency and durability in renewable energy applications.

Every year, the European Society of Thin Films (EFDS) organizes an annual event called “ALD FOR INDUSTRY”. Last week, on March 11-12 the 8th edition of this International Conference took place in Dresden. Established since 2017, the event attracts annually more than 100 participants and aims at bridging the gap between fundamental science, industrialization and commercialization of this technology.

Our Advisor for Advanced Materials and Researcher Gloria Gottardi was among the program committee members of the event and served also as chair during the conference sessions.

With her, there was also our researcher Sandro Zorzi, who attended the conference and had the chance to deepen the knowledge about ALD through the interesting tutorial sessions held by the main experts in the field at international level.

Read more on: <https://efds.org/en/event/ald-for-industry/>

Check the programme: [https://efds.org/wp-content/uploads/2025/03/Program\\_ALD\\_2025.pdf](https://efds.org/wp-content/uploads/2025/03/Program_ALD_2025.pdf)



18 MARCH 2025

## Luigi Crema in the Advisory Board of H2START Project

Last week, **Luigi Crema** participated in the launch of H2START project in Stara Zagora in Bulgaria. Our Director and [Hydrogen Europe Research](#) President participated in the High-Level Panel Discussion "Collaborating for Education, Research, Innovation, Policy and Regional Transformation" with

- Ivan Popov, Executive Director of the Executive Agency "Programme for Education"
- Daria Vladikova, H2START Scientific Coordinator
- Mariachiaro Zanetti, Vice-Rector of the Politecnico di Torino
- Julian Popov, Bulgaria Former Minister of Environment

Within **H2START project**, a Centre of Excellence for renewable hydrogen production will be established in Stara Zagora, whose purpose is to promote the development of innovative technology for clean hydrogen production and use.

Among the partners of the project there are [Trakia University](#) in Stara Zagora, the [Bulgarian Hydrogen, Fuel Cell and Energy Storage Association](#), and the Italian [Politecnico di Torino](#) and [Nicola Giordano Institute of Advanced Technologies for Energy](#).

The project is funded with EUR 15 million under the Horizon Europe Programme and national co-financing.

**Luigi Crema** is also among the members of the Advisory Board of the H2START.

On the possible strong link with the Hydrogen Cluster that is being established in Rovereto, Luigi reports "I'm really proud to support H2START as a member of the advisory board. This is an excellent occasion for Bulgaria to develop a wide infrastructure of research and innovation on hydrogen with European impact. We will open a dialogue to collaborate between our territories, Stara Zagora and Trento, and support the competitiveness of the European hydrogen sector."

Articles about the project

- "Centre of Excellence for Renewable Hydrogen Production to Be Established in Stara Zagora": <https://www.bta.bg/en/news/economy/851729-centre-of-excellence-for-renewable-hydrogen-production-to-be-established-in-star>
  - "The European Commission "Is Proud" to Support Hydrogen Centre of Excellence in Stara Zagora": <https://www.bta.bg/en/news/economy/851684-the-european-commission-is-proud-to-support-hydrogen-center-of-excellence-in-s>
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8 APRIL 2025

## Edoardo Macchi presents SMHYLES in "Powering the Future" webinar

On 4 April 2025, the first edition of the "Powering the Future" webinar series brought together researchers, industry experts, and stakeholders to explore the role of Hybrid Energy Storage Systems (HESS) in advancing sustainable energy solutions across Europe.

Moderated by Dr. Daniel Kiessling, the session opened with presentations from the coordinators of three Horizon Europe projects HAVEN, SMHYLES, and HI-HELIOS, each addressing the challenges and opportunities of hybrid storage technologies.

This webinar marks the beginning of a broader discussion on hybrid energy storage.

It was organised by the HAVEN, SMHYLES, and HI-HELIOS projects

Replay available here: <https://www.youtube.com/watch?v=xatgkVD-rMQ>

15 APRIL 2025

## Two busy weeks for the storage sector!

In the last two weeks, the Head of BET Unit Edoardo Macchi participated in some important event for the battery stakeholders and sector, while the researcher Mattia Duranti participated in the Batteries Europe Plenary Session.



### IPCEI Convention and Alkeemia Battery Forum 2025

The Alkeemia Battery Forum is an open event organized by Alkeemia and reserved for companies and professionals working within the battery and storage ecosystem, with the aim of supporting the European market growth by creating effective connections along the value chain and sharing updates on relevant projects underway. The event took place at the Scuola Grande di San Rocco, in the heart of Venice, is a symbol of innovation and timeless beauty, where Tintoretto's works tell stories of challenges, ambitions and achievements. It's the ideal context to discuss the batteries of the future, a theme that, just like art and science in the Renaissance, requires vision, boldness and collaboration to shape a new course for society.

### BatteryDay 2025 and E-TECH Europe in Bologna

At its fourth edition, the International Exhibition and Conference on Advanced Batteries and Innovative Technologies for Production & Recycling of Automotive, Transportation, Machines and Industrial Electric & Hybrid Vehicles takes the stage as the annual international trade show and brings together key industry players of the full e-motive supply chain.

Within E-TECH Europe and organised by BATTERY INDUSTRY, the first edition of the BATTERY DAY - the first networking, updating and business event for the sector in Italy.

In the various sessions the speakers will retrace their history and their experiences, the difficulties encountered even in today's reality, the current and future challenges. A valuable lesson for those who want to tackle this nascent industry, avoiding the mistakes of the past by taking advantage of the advice of those who have already faced and successfully overcome the many difficulties that have arisen over time.

Edoardo G. Macchi participated in the panel "Come incentivare gli investimenti nella filiera delle batterie [How to incentivize investments in the battery supply chain]" which saw an interesting discussion and exchanges among the representatives of Motus-E, The Faraday Institution, T&E Italia and Octilion USA. Check the programme here: <https://e-tech.show/agenda-14-april-2025-battery-day/>

### Batteries Europe Plenary Session

On April 10, the researcher Mattia Duranti participated in the Batteries Europe Plenary at the Thon Hotel in Brussels.

Batteries Europe is the platform bringing together all relevant stakeholders in the European batteries research and innovation ecosystem in order to develop and support a competitive battery value chain in Europe.

The final Plenary Session of Batteries Europe brought together up to 300 important players from around the European battery ecosystem to reflect on accomplishments and talk about future directions in energy storage and battery research.

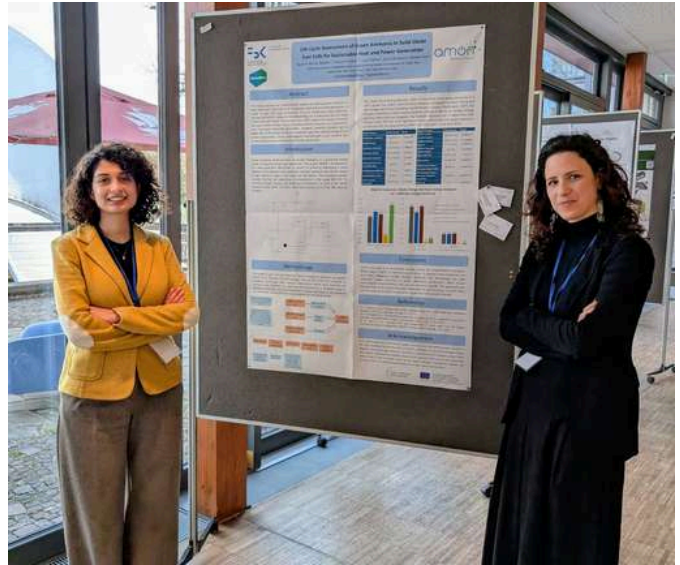
Read the press release if you are interested in knowing more about the sessions: <https://batterieseurope.eu/news/batteries-europe-hosts-its-plenary-session-on10-april-2025/>

16 APRIL 2025

## **FBK at OpenLCA in Berlin**

On April 10-11, Eleonora Cordioli and Yasaman Nosrat Tajoddin attended the second edition of the OpenLCA conference in Berlin.

“Two insightful days filled with presentations and discussions from experts in Life Cycle Assessment (LCA) across academia and industry. Topics ranged from OpenLCA tools and integration to circularity, LCA for policy, and applications in sectors such as food and agriculture, renewable fuels and energy systems” reported Yasaman.



The two researchers of the Center for Sustainable Energy at FBK presented the work “Life Cycle Assessment of Green Ammonia in Solid Oxide Fuel Cells for Sustainable Heat and Power Generation” done in the context of AMON Project.

The work showed that electricity produced from SOFC powered by green ammonia has lower climate change impact and reduced fossil resources use compared to fossil fuel-based electricity generation. However, material resource use was higher, mainly due to green ammonia production and the manufacturing of system components. With ongoing research and future technological improvements, this material use can be reduced, making electricity generated by green ammonia-fed SOFC a promising solution for a greener future.

More information on the conference, at the link: <https://www.openlca.org/>

18 APRIL 2025

## **Giuseppe Sassone presents CFD Analysis to PoliTO Students!**

Our HyRES researcher Giuseppe Sassone participated in the Erasmus Mundus Joint Master Multiphase Seminar on Multiphase Flow Simulation hosted by Politecnico di Torino on April 11.

Our researcher presented the work "CFD Analysis of Multiphase Flows in Porous Media for Hydrogen Production", highlighting the role of CFD in modeling transport phenomena, chemical reactions, and phase interactions within porous media, key to optimizing hydrogen production processes during low-temperature electrolysis.

**Abstract:**

This presentation aims to provide an overview of the state of the art in Computational Fluid Dynamics (CFD) analysis of multiphase flows in porous media for hydrogen production, focusing on Proton Exchange Membrane (PEM) and Anion Exchange Membrane (AEM) electrolyzers. In addition, the presentation proposes a CFD study aimed at modelling complex multiphysics phenomena in electrolyzers using the open-source software OpenFOAM. After performing a grid independence study and validating the model with experimental data, the model can be used to assess the impact of porous media properties on relevant performance indicators. Novel insights into optimizing electrolyzer performance are expected from the proposed study.

24 APRIL 2025

## Silvia Ricciuti at the OMC Med Energy Conference

The OMC Med Energy, formerly known as Offshore Mediterranean Conference & Exhibition was launched in 1993.

The event is a three-day conference and represents a unique opportunity for dialogue on decarbonization technologies, energy security strategies, competitiveness and sustainability issues. Through a rich programme consisting of Institutional Plenary Sessions, C-level Business Panels and Technical Sessions, OMC Med Energy Conference gathers voices from all around the world, making Ravenna the hub for energy debate in the Mediterranean Region.

The event took place from 8th to 10th April 2025 in Ravenna where international energy operators, stakeholders, institutions and academia presented solutions and cutting-edge technology in order to reshape the energy landscape for a sustainable future through proper transition.

Our researcher Silvia Ricciuti participated in the conference with the presentation "GREEN HYDROGEN AND RENEWABLE ENERGY COMMUNITIES SYNERGIES FOR A SUSTAINABLE FUTURE", whose proceeding was prepared in collaboration with the researchers Michele Bolognese, Gionata Luca, Matteo Testi.

The work was supported by ECOEMPOWER, a LIFE project co-funded by the European Commission under contract n°101120775.



7 MAY 2025

## Silvia Ricciuti at RE+Build

On May 6, our researcher Silvia Ricciuti presented the synergy between Renewable Energy Communities and hydrogen at the annual event RE+Build.

Since 2012, the event that anticipates industry trends. Decarbonization, process efficiency, off-site construction, construction industrialization, city making: REbuild was the first in Italy to speak the language of contemporary construction. REbuild creates positive impacts on the environment, society and the economy for an increasingly responsible built environment.

Silvia Ricciuti participated in the session "FONTI ENERGETICHE E DECARBONIZZAZIONE: NUOVE FRONTIERE (Energy sources and decarbonisation: new frontiers) chaired by Mauro Burgio, Director of the Bryden Wood Milan.

The panel discussion focused on renewable energy as the key to the energy transition, especially if used on a large scale thanks to technological innovations. But to achieve the goal, it is necessary to accelerate energy storage and smart grids. Green hydrogen is a big driver towards decarbonisation, even in the most challenging sectors. Energy sharing models are necessary to create exchange systems with an approach to self-consumption. At the same time, the debate is developing concerning a controversial and divisive energy source: nuclear power.

Among the speakers, with Silvia Ricciuti there were representative of ENEA, Terra Praxis and Sinloc - Sistema Iniziative Locali Spa.

13 MAY 2025

## Batteries and Hydrogen: topics at the Galileo Festival dell'Innovazione

Last week the 13th Ed. of the Galileo-Festival of Science and Innovation took place in Padova. The event is a national reference platform and a privileged place for dialogue between large, medium and small companies, research centers and institutions and the world of the University.

The event aims to (i) promote and spread the culture of innovation and technology transfer, through the promotion of an event with great local, national and international resonance, capable of involving in particular the world of young people, research and business, (ii) build synergies between Italian universities, the world of training and scientific research, innovation centers and businesses.

Edoardo Gino Macchi and Luigi Crema participated in the event with two panel discussions.

**Edoardo Macchi** participated in the panel "Batterie, tra riciclo e innovazione" with Laura Depero (University of Brescia).

Batteries are the silent heart of the energy transition, but their life cycle poses new challenges and opportunities: from the recycling of critical materials to innovation in design and production. By 2030, in Europe alone, it is estimated that 250,000 tons of batteries will reach the end of their life cycle, making the development of efficient and sustainable recovery and reuse technologies urgent. Projects such as Amelie, led by the University of Brescia, are already revolutionizing the sector, recovering more than 90% of strategic metals from lithium-ion batteries and promoting a circular supply chain that transforms complex waste into a resource for the manufacturing industry.

If you missed the panel, check the registration here: <https://www.youtube.com/live/HEVQnfXCfIA?feature=shared>

**Luigi Crema** participated in the panel "Idrogeno: un ponte verso la sostenibilità" with Alessandro Colucci (Intergruppo parlamentare sullo sviluppo sostenibile) and Vito Di Noto (Università di Padova).

Hydrogen is the new protagonist in the race towards sustainability: a vector capable of storing and releasing large quantities of energy without producing CO<sub>2</sub> emissions. Its versatility makes it strategic for decarbonising sectors such as industry, transport and electricity production, offering solutions where direct electrification is not possible. Green hydrogen – produced from renewable sources via electrolysis – is at the heart of European climate strategies, but open challenges remain regarding costs, infrastructure and sustainability of the entire supply chain.

If you missed the panel, check the registration here: <https://www.youtube.com/live/ubo3iso0Rts?feature=shared>

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20 MAY 2025

## Industry Chemistry interviews Luigi Crema. Filiera idrogeno rinnovabile, intervista esclusiva a Luigi Crema

Alla vigilia di Hydrogen Expo di Piacenza, la nostra redazione intervista il presidente di Hydrogen Europe Research per fare il punto sulla situazione europea e italiana della filiera dell'idrogeno, elemento strategico per il net zero.

<https://www.industrychemistry.com/filiera-idrogeno-rinnovabile-intervista-esclusiva-a-luigi-crema/>



28 MAY 2025

## The Hydrogen sector: best practices and priorities

Luigi Crema, Director at Center for Sustainable Energy FBK has been invited as Keynotespeaker at the [9th International Hydrogen Technologies Congress – IHTEC 2025](#).

IHTEC-2025 serves as a forum for the exchange of technical knowledge, the dissemination of high-quality research, and the presentation of new policies and scientific advancements in the field of hydrogen energy. The congress covers a broad range of topics related to the hydrogen ecosystem, including production, storage, distribution, utilization, safety, and policy; and fosters effective and fruitful discussions and collaborations among participants from various disciplines, institutions, and sectors worldwide.

Our Director Luigi Crema gave the talk "Overview on the European Research and Innovation in the Hydrogen sector: best practices and priorities".

20 MAY 2025

## Energy and Digital Innovation with the European FLEXIndustries Project

FBK to host the General Assembly with 30 European Partners; one of six European demonstration sites located in Rovereto at Suanfarma

Fondazione Bruno Kessler (FBK) recently hosted the General Assembly of the European project [FLEXIndustries](#), which brings together over 30 international partners to review the technology solutions being developed to make energy-intensive industries more sustainable. Funded by the Horizon Europe programme and launched in 2022, the project features six demonstration sites across Europe.



In Italy, the demonstration site is located in Rovereto, at the Suanfarma pharmaceutical plant—one of the main industrial facilities in Trentino.

FBK Magazine <https://magazine.fbk.eu/en/news/energy-and-digital-innovation-with-the-european-flexindustries-project/>

3 JUNE 2025

## Luigi Crema at Net Zero Milan Expo Summit



Production and technologies at the center of the first session at Net Zero Milan Expo Summit, which took place on 14-15-16 May 2025, in Milan.

Luigi Crema, President of Hydrogen Europe Research and Vice President of H2IT, took stock of the development of the European technological supply chain, which is losing ground to global competition, especially Asian competition – *“only 3 years ago, EU electrolyzer producers had 50% of the market, while today their share has fallen to 30%”*.

He then confirmed that overly rigid rules can be counterproductive: “The particularly tight constraints for the production of renewable hydrogen in the Delegated Act on RFNBOs do not facilitate the creation of an H2 market. Indeed, they risk hindering it by further increasing the final cost of the energy carrier”. For this reason, said Crema, “12 EU member states have asked the Commission to review these criteria, which will probably happen during 2028”.

Article taken from HER Monthly newsletter - May 2025

4 JUNE 2025

## Widening engagement and increased commitments for newly awarded initiatives

Partners of the North Adriatic Hydrogen Valley (NAHV) have gathered in Trieste at their second Annual Consortium Meeting to review the implementation of industrial testbeds and horizontal actions. The two-day meeting is hosted by the Autonomous Region Friuli Venezia Giulia.

FBK leads the project activities related to Exploitation and Replication and is involved in the establishment of a safety plan of the hydrogen valley, the creation of a digital twin to replicate the entire valley, study of a new market scheme for transnational hydrogen trading. The state of the activities was presented by the researchers of the Center Sasan Jorjani, Yasaman Nosrat Tajoddin and Emanuele Martinelli with our Senior Business Development Marco Tomasi and Head of HyRES Unit Matteo Testi.

Read the entire press release at <https://www.nahv.eu/widening-engagement-and-increased-commitments-for-newly-awarded-initiatives/>

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11 JUNE 2025

## Luigi Crema at EUSEW

On June 10, Luigi Crema participated in the session "Decarbonising hard-to-abate transport sectors with renewable fuels and green hydrogen" which delved into the current hurdles and opportunities related to scaling up renewable and low-carbon fuels in the maritime and aviation sectors. The panelists discussed where to prioritise action, ensure sufficient energy resources as well as how to make sufficient funding available for new projects.

Luigi Crema outlined the technological development expected to make it easier to produce synthetic fuels and described the priorities from the R&I point of view. Then, the Director reported the actions that the EU needs to do in terms of R&I to support accelerating of this energy transition for renewable and low carbon fuels.

More information at <https://interactive.eusew.eu/eusew-2025/sessions/72c8f7c6-283a-4e12-92af-ff600a192f3a>

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13 JUNE 2025

## Hydrogen Europe Research: Stakeholders call for funding boost to maintain EU global leadership in hydrogen

Hydrogen Europe Research (HER) hosted an exclusive high-level panel discussion in Brussels on 12 June bringing together senior officials from the European Commission, Member States' representatives and the hydrogen research and industry community.

Speakers agreed on the need for greater resilience in Europe through integrated and robust energy systems, binding rules for early-market support, and a coordinated EU programme to address barriers across the hydrogen value chain.

Luigi Crema, President of Hydrogen Europe Research, said: "Hydrogen Europe Research supports strengthening Europe's hydrogen R&I to ensure scientific excellence, industrial leadership and global competitiveness. We call on the European Commission for continued support for hydrogen and, in particular, research funding from the lowest TRLs. Recent reports stress the urgency of further investing in key strategic sectors in which the EU has a fragile lead. Hydrogen is on top of the list. We must enhance performance, design and cost-efficiency within a sustainable path. We urge the European Commission to strengthen the Clean Hydrogen Partnership by strategically linking it to industrialisation and first-market development in coordination with Member States."

[https://hydrogeneuroperesearch.eu/content/uploads/2025/06/Hydrogen-Europe-Research\\_Press-Release\\_13-June-2025.pdf](https://hydrogeneuroperesearch.eu/content/uploads/2025/06/Hydrogen-Europe-Research_Press-Release_13-June-2025.pdf)

18 JUNE 2025

## The Trentino system on a mission to Lyon to strengthen commercial relations

As reported in the [Trentino Sviluppo press release](#), 38 representatives from Trentino travelled to Lyon for the institutional mission promoted as part of the "France Project", one of the most important initiatives with which the Province intends to strengthen the presence of local companies abroad.

The mission across the Alps included representatives of the Autonomous Province of Trento, Trentino Sviluppo, Trentino Marketing, Fondazione Bruno Kessler, the University of Trento, Fondazione Edmund Mach, Confindustria Trento, Associazione Artigiani Trentino, the Chamber of Commerce and a selection of companies.

The Center for Sustainable Energy was also present! Our Director Luigi Crema with the HyRES researchers Eleonora Cordioli and Paolo Piras participated in the event, which featured a conference focusing on mutual development opportunities for the two territories, and the visit to a commercial facility dedicated to green hydrogen mobility and business meetings for companies.

Luigi Crema moderated the panel "Le politiche di sviluppo della filiera dell'idrogeno nella Regione Auvergne-Rhône-Alpes e in Trentino: opportunità e collaborazioni internazionali" where the hydrogen policies of the two regions were discussed as well as the opportunities for international collaborations. Our Director also presented the scenario for hydrogen valleys in Trentino region.

Read the press release (in Italian): <https://trentinosviluppo.it/it/ELE0019629/il-sistema-trentino-in-missione-a-lione-per-rafforzare-i-rapporti-commerciali>

23 JUNE 2025

## Sasan Jorjani at ISFEH 11

Since the 16th to the 20th of June 2025, the 11th International Seminar on Fire and Explosion Hazards (ISFEH 11) took place in Rome, hosted by the Faculty of Civil and Industrial Engineering at Sapienza University.

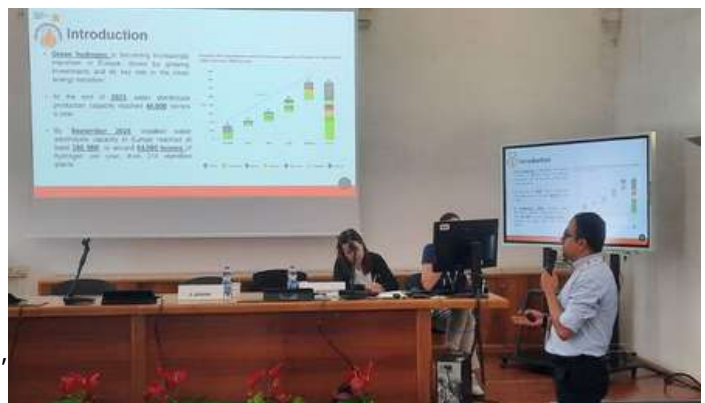
ISFEH 11 is a premier international forum that brings together leading researchers, professionals, and industry experts in the field of fire and explosion hazards. The seminar features plenary lectures, oral and poster sessions, and peer-reviewed publications covering a wide range of topics, including hydrogen safety, battery safety, fire dynamics, and industrial risk mitigation. Since its first edition in 1995, ISFEH has been hosted in various cities around the world: Moscow (1995, 1997), Lake Windermere (2000), Londonderry (2003), Edinburgh (2007), Leeds (2010), Providence (2013), Hefei (2016), St Petersburg (2019) and Oslo (2022).

The HyRES researcher Sasan Jorjani participated in the conference and presented the paper co-authored with Matteo Testi, entitled "Operational Safety Analysis for a Prototype of Hydrogen Production via PEM".

The participation in the conference underlines how safety remains a top priority for the Center in the advancement of hydrogen technologies.

More information on the conference: <https://www.isfeh11.org/>

Link to the book of abstract: <https://zenodo.org/records/15697662> (pp. 153-154)



27 JUNE 2025

## Matteo Testi and SWITCH at the Ambasciata Italiana di Svizzera in Italia

With the event "Switzerland and Italy: together for competitiveness through research and innovation", the Embassy establishes itself as a meeting point for the scientific community of Switzerland and Italy, promoting dialogue and international collaboration. In line with the commitment to enhance research and innovations as drivers of economic competitiveness, two research projects were presented in which these two countries collaborated under the Horizon Europe programme.

Jan van Herle (EPFL) and our Head of HyRES Unit Matteo Testi represented the Switch project, as concrete example of success in an interconnected and competitive European context, where dialogue, synergies and good practices between the two countries are highlighted thanks to the contribution of institutional, academic, research and business representatives.

Matteo Testi confirmed the good relationship with EPFL "with several demonstrations of collaborative and fruitful collaboration between the two research entities. The complementar skills and competences between FBK-EPFL promote the success rate of European funding opportunities and the creation of added value. A special thanks to prof. Jan Van herle, for the continuous support on the collaborations."

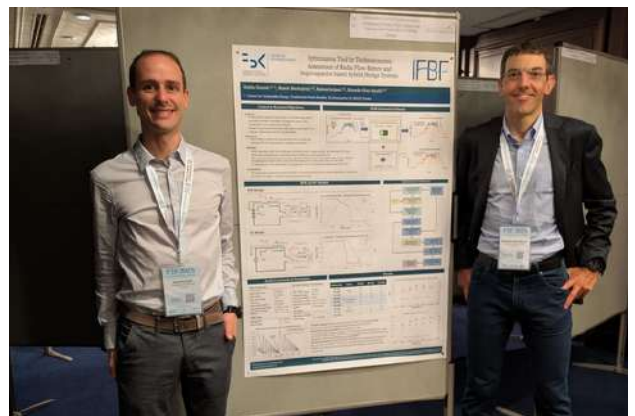
More information on: <https://www.eda.admin.ch/countries/italy/it/home/attualita/newsletter.html>

2 JULY 2025

## Mattia Duranti and Edoardo Macchi at IFBF 2025

Last week, the Head of BET Unit **Edoardo G. Macchi** and the researcher **Mattia Duranti** participated in the International Flow Battery Forum, which took place from 24 to 26 June in Vienna, Austria, at the Intercontinental Hotel with the support of CellCube and Flow Batteries Europe.

**Mattia Duranti** presented the poster "*Optimization Tool for Techno-economic Assessment of Redox Flow Battery and Supercapacitor based Hybrid Storage Systems*" which showed the results of the project SMHYLES on the use of an aqueous hybrid system.



In this system an inherently safe supercapacitor and a likewise safe flow battery can operate, in a coordinated and complementary way, to satisfy the needs of a large energy consumer.

Here FBK developed a computational tool to help the system operator in doing an optimal choice of the storages' sizes, considering what would be the optimal use of the hybrid system for a full year and the expected economic framework.

Through talks, panel sessions and open discussions, the conference has been an opportunity to connect with experts in the field and help shape the future of electrical energy storage. The researchers also participated in the visit to CellCube production site, exploring the developments of the company products throughout the time and playing with the 333kW flow battery installed in the site!

More information on the event: <https://flowbatteryforum.com/>

7 JULY 2025

## Maciej Marczak at OpenFOAM Workshop



On July 2, the researcher of the Battery and Electrification Technologies Unit Maciej Marczak participated with a presentation and a poster in the 20th OpenFOAM Workshop.

The event took place in Vienna from June 30 to July 4, 2025, and was organized and hosted by AIT - Austrian Institute of Technology. The OpenFOAM Workshop is the largest annual OpenFOAM conference, and longest-running gathering of the OpenFOAM community. The attendees have the chance to dive into enriching conference presentations, showcase their work in engaging poster sessions, and gain hands-on experience through practical training sessions.

During the technical session 3A, Maciej Marczak presented the work "An OpenFOAM based-based multi-physic multi-region model for All Vanadium Redox Flow Batteries", done in the context of the IPCEI Batteries.

More information on the event: <https://www.openfoam25.at/vienna2025/home>

### Acknowledgement

This work is funded by the Italian Ministry of Enterprises and Made in Italy in the framework of the Important Project of Common European Interest (IPCEI) European Battery Innovation [IPCEI Batterie 2 - CUP: B62C22000010001]. The IPCEI European Battery Innovation is also funded by public authorities from Austria, Belgium, Croatia, Finland, France, Germany, Greece, Poland, Slovakia, Spain and Sweden.

11 JULY 2025

## Sandro Zorzi and Matteo Bordin at Nanotexnology 2025



From July 8 to 11, the researchers of the Hydrogen technologies and Resilient Energy Systems (HyRES) Unit Sandro Zorzi and Matteo Bordin participated in the 22nd International Conference on Nanosciences & Nanotechnologies.

On Thursday July 10, Matteo Bordin presented the work entitled "Plasma-based deposition techniques for green and versatile synthesis of advanced materials for hydrogen technologies" which focuses on focuses on the controllability of plasma PVD and ALD methodologies in addressing multi-scale challenges in electrolyzer development.

On the same day, **Sandro Zorzi** presented the work entitled "*N-integration in Ni-Fe-Cr-Ru-Mo High-Entropy Electrocatalytic Materials*" which focuses on the controlled synthesis of nitrogen-incorporated Ni-Fe-Cr-Ru-Mo high-entropy materials (HEMs) to develop novel and enhanced electrocatalytic properties for hydrogen production using plasma-based deposition technologies.

The work is the result of the collaboration with the **Maryam Eslami**, winner of the PAT Visiting Trentino 2024 grant and researcher at the Applied Research Institute of the University of Illinois Urbana-Champaign, (Illinois, USA).

*Acknowledgement:*

We thank Autonomous Province of Trento (PAT) for the financial support within the framework of the "Visiting in Trentino 2024" grant, and the project DURAMPEA.

More information on the event: <https://www.nanotechnology.com/index.php/nn25-program>

21 JULY 2025

## **FBK at SOFC XIX**

The researchers of the HyRES Unit **Emanuele de Bona** and **Sookyung Kang** participated in the 19th International Symposium on Solid Oxide Fuel Cells (SOFC-XIX).

The event took place at the historic Münchenbryggeriet in Stockholm, Sweden, from July 13-18, 2025.

Since 1989, this international conference has brought together scientists, engineers, and researchers from academia, industry, and government laboratories to share results and discuss issues related to solid oxide fuel cells and electrolyzers. This forum provides an opportunity to learn and exchange information on the latest scientific and technical developments relating to SOFCs and SOECs.

**Emanuele de Bona** presented the poster entitled *Physical Vapor Deposition of Functional Layers for Electrolyte-Supported Reversible Solid Oxide Fuel Cells / Electrolyzers*. The poster reports the research activity done on protective layers which must be applied between the electrolyte and the electrodes to avoid chemical reactions and element interdiffusion during operation. These layers were applied by well-established screen printing and physical vapour deposition (PVD), to try to minimize its thickness and optimizing the cell performance.



The work was done in collaboration with other researchers of the Center for Sustainable Energy and with the University of Trento. The activity is part of the research activities of the **project Hy-SPIRE**, supported by the Clean Hydrogen

Partnership and its members, under grant agreement No 101137866, and by the **project H2@TN** funded by the University of Trento (Piano Strategico 2022-2027) and Provincia Autonoma di Trento (Delibera della Giunta Provinciale 2166 – 25/11/2022).

Read the abstract here: <https://ecs.confex.com/ecs/sofc2025/meetingapp.cgi/Paper/205758>

**Sookyung Kang** presented the work entitled *Techno-Economic Analysis of Proton Conducting Ceramic Electrolysis*, which examined the current technological developments in production processes, and defined manufacturing processes, along with technical specifications and material costs from suppliers.

This work is also part of the research activities of the **project Hy-SPIRE**, supported by the Clean Hydrogen Partnership and its members, under grant agreement No 101137866.

Read the abstract here: <https://ecs.confex.com/ecs/sofc2025/meetingapp.cgi/Paper/205949>

1 JULY 2025

## FBK at ISECAT 2025

The researchers of the HyRES Unit C. Chandraiahgari, Giulia de Gregorio, Domenico D'Alessandro, Alice Carlotto, Varun Donnakatte and Uzma Faiz participated in ISECAT 2025 - The International School of Electrocatalysis of ACee(SCI).

The event took place in Padua from 23 to 26 July 2025 and gathered top-notch international scientists and students to exchange knowledge in the field of electrocatalysis for application in electrochemical energy conversion/storage devices and indications on the main directions for the development of the state of the art in the next future.

The researchers presented two posters: *Dry Plasma Synthesis of Nanohybrids and Nanofluids for Water Electrolysis: Toward CRM-Free, Green and Efficient Catalytic Materials*.



This work presents a dry and green synthesis approach using RF magnetron sputtering, a physical vapor deposition (PVD) technique, to develop nanohybrids (catalyst-coated powders) and nanofluids (nanoparticles suspended in liquids) catalysts for water electrolysis. The method eliminates hazardous chemicals and multi-step processes, enabling sustainable and scalable nanocatalysts production.

*Development of Porous Transport Electrode (PTE) for low temperature electrolysis.*

The work aims to engineer durable, low-Ir-loading PTEs using electrochemical anodization and surface modification of Ti-based substrates.

Acknowledgment:

The activity was done within "Network 4 Energy Sustainable Transition - NEST". The Project is funded under the National Recovery and Resilience Plan (NRRP), Mission 4, Component 2, Investment 1.3 - Call for tender No. 1561 of 11.10.2022 of Ministero dell'Università e della Ricerca (MUR); funded by the European Union - NextGenerationEU. Project code PE0000021.

29 AUGUST 2025

## FBK at the 5th International Conference on Electrolysis

The 5th International Conference on Electrolysis - ICE2025 took place from August 25-29, 2025 in Freiburg, Germany.

At its 5th edition, the event is rapidly becoming a key platform for PhD students, academic researchers and technical experts from industry to share breakthroughs in electrolysis technology, particularly in its role in energy conversion and green hydrogen production.

Our researchers Sookyung Kang and Emanuele de Bona in ICE2025 respectively with a presentation and a poster.

Sookyung Kand presented the work entitled "Techno-economic analysis of proton conducting ceramic electrolysis", done in the context of the [Hy-SPIRE Project](#).

Emanuele de Bona presented the work "Physico-Chemical Characterization and Preliminary Electrochemical Performance of Proton-Conductor Solid Oxide Electrolysis Cells" done in collaboration with the University of Trento in the [H2@TN project](#).

If you are interested in the history, scope and other info on the ICE conference series, please check this [website](#).

29 AUGUST 2025

## Luigi Crema in Busan to sign the MoU with the Clean Hydrogen Mission

Yesterday, in Busan (South Korea), the Director of the Center for Sustainable Energy Luigi Crema as [Hydrogen Europe Research](#) President signed a Memorandum of Understanding with the [Clean Hydrogen Mission of Mission Innovation](#).

This document marks a new chapter in global cooperation for clean hydrogen research and innovation.

Through this MoU, both organisations commit to strengthening collaboration in a number of key areas:

- advancing open science practices in hydrogen research,
- promoting international R&I cooperation,
- supporting the growth and scaling-up of Hydrogen Valleys worldwide,
- coordinating policies to create an enabling environment for hydrogen,
- developing next-generation hydrogen technologies, and
- addressing skills and training needs for the hydrogen workforce.

By joining forces, Hydrogen Europe Research and the Clean Hydrogen Mission aim to speed up the development and uptake of integrated clean hydrogen value chains across developed and developing regions.

Our Director and HER President Luigi Crema said: "Hydrogen Europe Research and the Clean Hydrogen Mission share a common ambition: to bring hydrogen technologies to the next level and make them accessible worldwide. This MoU will allow us to work more closely together, align efforts across regions, and ensure that knowledge and innovation are shared openly for the benefit of all.

There are still several challenges for a global uptake of hydrogen as a clean energy carrier and a global energy commodity. Some of these barriers can be solved through a dedicated support to research and innovation, to specific challenges, technology gaps, improving at the same time performances and sustainability and reducing the overall technology costs. We are thrilled to work together on a roadmap of global goals of research".

The signing of this Memorandum of Understanding reflects a strong commitment to advancing hydrogen as a key solution for the global clean energy transition. It underscores the growing momentum around international cooperation, bringing together governments, research organisations, and industry to tackle climate change and secure a sustainable future.

Piero Venturi, Director of the Clean Hydrogen Mission, added: "The signing of the Memorandum of Understanding with Hydrogen Europe Research will allow to join forces with a major player in the European hydrogen sector, bringing together leading universities and research organizations committed to scientific excellence and technology transfer, with a view to creating the European industrial champions of tomorrow. [...] We are sure that our joint efforts will lead to noticeable changes. We look forward to the emergence of even more efficient and sustainable hydrogen technologies, an increase in the number of Hydrogen Valleys in Europe year after year, and market penetration of hydrogen as an essential decarbonization solution in heavy transport and industry."

By connecting the work of the Clean Hydrogen Mission, Hydrogen Europe Research, and the Clean Hydrogen Partnership, this collaboration will help bridge research and innovation with large-scale deployment, creating real impact for communities, economies, and the planet.

Read the entire press release on the HER Website: [https://hydrogeneuoperesearch.eu/content/uploads/2025/08/Press-release-MoU-HER-CHM\\_Final.pdf](https://hydrogeneuoperesearch.eu/content/uploads/2025/08/Press-release-MoU-HER-CHM_Final.pdf)

9 SEPTEMBER 2025

## FBK at the MILLENNIUM CLEAN and SUSTAINABLE POWER workshop

On 4-5 September 2025, Villa Cambiaso Salone Nobile (Genoa) hosted the LEAP-NEST 2025 Event "The MILLENNIUM CLEAN and SUSTAINABLE POWER workshop 2025". Matteo Testi, Valentina Prusakova and Emanuele de Bona participated in the event with speeches and presentations.

Matteo Testi participated in the Opening plenary session as invited speaker. The session entitled The Energy Nexus in the global panorama had the goal to setup the scene of the following content of the day in terms of (i) Global R&D Development activities

on sustainable energy, (ii) policies and objectives at global level to promote sustainable energy transition.

All speakers presented the current R&D and policy goals in their specific contexts and countries. The panel saw the participation of:

- Prof. Dr. Haslenda Hashim (Universiti Teknologi Malaysia) presented Malaysia and Asia context and policies;
- Francesco Roncallo (Engreen) presented the technologies and policies promoting clean energy in Developing Countries (with a focus if possible in LATAM)
- Dr Celia Artur (Universidade Eduardo Mondlane) presented Mozambique and Africa
- Giannicola Loriga (STAM) presented EU Policies and R&D Objectives
- Matteo Testi (FBK, as delegate of Luigi Crema, Head of Hydrogen Europe Research) presented an overview of Italian and EU activities and objectives for the promotion of hydrogen
- Huisheng Zhang (Shanghai Jiao Tong University) presented China and Asia

Valentina Prusakova gave the presentation "Exploring A Single Cell of Anion Exchange Membrane Water Electrolyzer" in the conference session #2 Electrolyzers & Electrochemical Hydrogen Production and chaired the conference session #1 E-Fuels, Power-to-X, Energy storage and Techno-Economic Analysis.

Emanuele de Bona presented the work entitled "Installation and preliminary operation of versatile test bench for reversible Solid Oxide Cells (r-SOCs) electrochemical characterization" during the conference session #1 Fuel Cells – Development, Testing, and Modelling.

The workshop was organised by the Network for Energy Sustainable Transition – NEST and the Low Emission Advanced Power forum. More information on: <https://tpg.unige.eu/nest-leap-2025/>



16 SEPTEMBER 2025

## FBK at the 16th Modelica & FMI Conference

Last week, the 16th International Modelica & FMI Conference took place in Lucerne (Switzerland) from September 8-10, 2025. Organized by HSLU - the University of Applied Sciences and Arts Lucerne, in cooperation with the Modelica Association, the conference is the main event for users, library developers, tool vendors and language designers to share their knowledge and learn about the latest scientific and industrial progress related to Modelica, FMI, SSP, eFMI and DCP.

On Sept 9, in the session FMI Tool Development, Michele Urbani introduced the work "A Tool for the Implementation of Open Neural Network Exchange Models in Functional Mockup Units".



On Sept 10, in the Scientific Track Energy on Fuel Cell Modeling and Control, Michele Bolognese presented the work "Dynamic modelling of an Ammonia to Power application at high efficiency using a solid oxide fuel cell system".

On Sept 10, in the same session, Emanuele Martinelli gave the presentation "Direct Ammonia Solid Oxide Fuel Cell Stack: Modelling and Experimental Validation".

The works of Michele Bolognese and Emanuele Martinelli are carried out within the context of the [AMON project](#).

The International Modelica & FMI Conference covered processes and tools for the modeling of complex physical and cyber-physical systems as applied to a wide range of research and industrial applications. In addition to paper presentations, the conference featured several Modelica tutorials for beginners and advanced users, as well as industrial user presentations, vendor sessions, and an exhibition.

Stay tuned! The book of proceedings will soon be published!

Read more about the conference here: <https://modelica.org/events/modelica2025/>

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17 SEPTEMBER 2025

## **Eleonora Cordioli and Sara Stemberger at IMC2025**

The IMC - International Mountain Conference took place from September 14 – 18 2025 in Innsbruck, Austria. The IMC builds upon the previous mountain conferences and aims to continue this scientific conference series exclusively targeted towards mountain-research. Hosted in the Alps, it provides an excellent opportunity for experts from different disciplines to discuss mountain-related issues in a cross-disciplinary setting with flexible session formats.

The key goals of the conference are to enhance our understanding of mountain systems, in particular their response and resilience to global change. The researchers Sara Stemberger and Eleonora Cordioli participated in the conferences with two posters and respective presentations.

**Sara Stemberger** gave the talk "Mountain Huts as Climate Sentinels: Perceptions of Water Scarcity Through Interviews with Hut Managers and Decision-Makers" during the session Tourism(s) in Mountain Huts: Climate Change, Tourism flows, Visitor Impacts, and Sustainable Management Solutions.

Read the abstract here: <https://imc2025.info/imc25/abstract/mountain-huts-as-climate-sentinels-perceptions-of-water-scarcity-through-interviews-with-hut-managers-and-decision-makers/>

The researcher also participated in the poster session Generating and integrating interdisciplinary data to understand mountain socio-ecological dynamics and support multi-scale policy formulation with the poster "Engaging Local Stakeholders to Enhance Climate Change Mitigation and Adaptation Strategies and Policies: A Case Study from the NEVERMORE Project" done in the context of the [NEVERMORE project](#).

Read the abstract here: <https://imc2025.info/imc25/abstract/engaging-local-stakeholders-to-enhance-climate-change-mitigation-and-adaptation-strategies-and-policies-a-case-study-from-the-nevermore-project/>

**Eleonora Cordioli** participated with the poster "[SkHyline](#): A Knowledge-Sharing Platform for Accelerating Green Hydrogen Innovation and Sustainable Economic Growth in the Alps". The researcher presented the platform created within the [Alpine Space project AMETHyST](#).

The poster was part of the session Bridging Science, Policy, and Civil Society for Transformative Action in Mountain Regions

Read the abstract here: <https://imc2025.info/imc25/abstract/skhyline-a-knowledge-sharing-platform-for-accelerating-green-hydrogen-innovation-and-sustainable-economic-growth-in-the-alps/>

18 SEPTEMBER 2025

## **Matteo Testi speaks about mobility and energy transition**

Radici Future is an event that since 2020 focuses on sustainability, the circular economy, and business ethics. Today, as part of the program of initiatives promoted by the Bassano del Grappa Municipal Administration for European Mobility Week 2025, the Radici Future organising committee organised the event "Verso una mobilità ad idrogeno: innovazione, infrastrutture e sfide".

Our Head of HyRES Unit Matteo Testi gave an overview of the topic, explaining the importance of hydrogen in a just transition, and reported FBK participation in European and national projects for the production, storage, and use of hydrogen in the energy and mobility sectors, helping to build an innovative and strategic supply chain for the ecological transition.

The program that combines scientific reflection, practical experiences, and visions for the future. Over 200 students from various majors at the Liceo Ginnasio GB Brocchi attended the meeting, and they have welcomed the initiative with great interest and participation.

The initiative is part of the Radici Future program and aims to foster dialogue between institutions, businesses, the research community, and the younger generations, exploring concrete solutions to address environmental challenges and build more resilient and safer mobility.

Read more about Radici Future here: <https://www.radicifuture2030.org/>

19 SEPTEMBER 2025

## **FBK at EFC 2025 in Capri**

The 11th edition of the European Fuel Cells and Hydrogen Piero Lunghi Conference 2025 – EFCH2 2025 took place in Capri (Italy) from Sept 17th to Sept 19th. It is recognized as one of the most important international conferences in the field of hydrogen technologies and fuel cells, and it provides a unique opportunity to showcase the latest technical advancements, establish new contacts, and promote the exchange of technical, industrial, and commercial information.



The FBK Center for Sustainable Energy was there!

The conference covers a broad spectrum of hydrogen, fuel cell, and electrolysis-related topics, from production technologies to cutting-edge applications across sectors. Key areas of focus include, but are not limited to, materials innovation, advanced component manufacturing, numerical modelling, system integration, safety protocols, policy frameworks, and comprehensive market and environmental analyses.

Luigi Crema and several researchers of the HyRES Unit participated in the event with talks, presentations and networking activities. In particular, the researchers attending the conference were Elena Crespi, Giulia di Gregorio, Luca Praticò, Valentina Prusakova, Silvia Ricciuti, Michele Rizzi, Giuseppe Sassone and Sandro Zorzi.

The Director of the Center for Sustainable Energy and HER President Luigi Crema gave the speech "Strategic Research Priorities for Hydrogen: A Roadmap Beyond 2030" in Session Shaping the Future of Hydrogen Innovation on September 17th.

On September 18th,

- Giulia di Gregorio gave the presentation "Advancing AEM Electrolysis: A Novel Single-Cell for Evaluating High-Performance Membranes and Electrodes" in the session 3c Low Temperature Electrolysis I. In the same session, Valentina Prusakova got the attention of the audience with the presentation "Anion Exchange Membrane Water Electrolysis with Poly(biphenyl piperidone cotrifluoroacetophenone) random copolymers as Membranes".
- in session 4c Low Temperature Electrolysis II Elena Crespi presented the work "On the effects of platinization of commercial titanium Porous Transport Layers in PEM water electrolysis cells" while Giuseppe Sassone outlined the "Impact of Porous Transport Layer Microstructure on Oxygen Transport in a PEM Electrolyzer".
- Michele Rizzi presented the work "Comparison of different fuel mixture for direct ammonia fuel cell" during the session High Temperature Fuel Cells II on September 18, 2025. The work was carried out within the context of the [AMON project](#).

On September 19th,

- the first FBK presentation was given by Luca Praticò with his "Study on experimental parameters of PEMFC stack under CO contamination with Machine Learning Technique" during the session 8b PEM Fuel Cell II. The work was carried out within the context of the [CLEANER project](#).
- Silvia Ricciuti presented the work "Techno-Economic and Environmental Assessment of Hydrogen Integration in Renewable Energy Communities in Italy" during the session 8c Hydrogen Ecosystem: Techno-Economic and Strategic Perspectives II
- in the session 9a Hydrogen Innovation and Future Trends Sandro Zorzi raised the interest of the audience with his presentation entitled "Optimizing Electrocatalysis in Ni-Fe-Cr-Ru-Mo-(N) High-Entropy Films".

Stay tuned to know more! The book of proceedings will soon be published!

Read more about the conference here: <https://www.europeanfuelcells.com/efc-25-capri-conference>

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22 SEPTEMBER 2025

## Giuseppe Sassone wins the H2EXCELLENCE best thesis award

The award established by the H2Excellence project aims to select the best master and PhD theses in the area of fuel cells and hydrogen.

Giuseppe Sassone is a researcher at the Center for Sustainable Energy at [Fondazione Bruno Kessler](#) where his work focuses on Computational Fluid Dynamics simulation within the HyRES Unit. In 2024, Giuseppe defended his PhD thesis carried out at the [CEA Grenoble](#), obtaining his doctoral degree from the [Université Grenoble Alpes](#).

The thesis entitled Degradation Mechanisms of the Lanthanum Strontium Cobalt Ferrite Used as Oxygen Electrode in Solid Oxide Cells has been awarded of the second place in the category "PhD theses" of the H2Excellence best thesis award.

This award initiative was established to inspire and motivate young researchers to engage in scientific projects and disseminate groundbreaking research to a wider audience. The award selected the three best thesis in two categories, Master's and PhD.

The [H2Excellence project](#) is dedicated to promoting excellence in research on fuel cells and green hydrogen. The project aimed to create and implement lifelong learning opportunities and develop national and international curricula and training programmes for both initial training of young people, engineers as well as for up-skilling and reskilling of adults, through flexible and timely offer of training for the skills needs of companies in the green hydrogen sector.

the award ceremony took place on September 18, in Capri, during the 11th edition of the European Fuel Cells and Hydrogen Conference, recognized as one of the most important international conferences in the field of hydrogen technologies and fuel cells.

"I am honored to receive the H2Excellence PhD Thesis Award. This award represents not only a personal milestone, but it is also proof of the guidance and support I have received throughout my academic journey" outlined Giuseppe Sassone. "For this reason, I wish to express my sincere gratitude to my supervisors Jérôme Laurencin, Bertrand Morel and Aline Léon, for their invaluable mentorship. I am equally grateful to my colleagues, peers, and the academic community who enriched my research work during insightful discussions and collaborations. This recognition strengthens my commitment to pursue my research work in the field of energy conversion technologies, with a focus on the hydrogen sector."

Giuseppe Sassone thesis investigates solid oxide cell degradation through a threefold approach, comprising multiscale physics-based modelling, long-term tests, and advanced post-test analyses. The model adapted to the studied cell (Ni-YSZ/YSZ/GDC/LSCF) and validated against experimental data, provides an understanding of cell-level processes under varied operating conditions. The model includes morphological and microscale electrochemical kinetic models for the hydrogen and oxygen electrodes, complemented by a macroscale model simulating the complete cell response. The findings demonstrate the model capability to predict both stationary and dynamic electrochemical responses, including local responses along the cell radius. This work contributes to the field of energy conversion technologies by advancing the fundamental understanding of SOC degradation and providing guidance for targeted improvements to facilitate the large-scale deployment of this promising technology. Read the full abstract [at this link](#).



25 SEPTEMBER 2025

## EU Project LEONARDO supports the clean energy transition of European businesses



Coordinated by Fondazione Bruno Kessler, the LIFE funded European project with around €1.75 million LEONARDO will boost collaborative energy demand flexibility in neighboring industries.

On September 24th and 25th the LEONARDO partners' consortium met at Fondazione Bruno Kessler, in Trento for the official project kick-off. Over 20 representatives of 11 project partners from Italy, Austria, Bulgaria, Spain, Greece and Portugal came together for the first time. With the project kick-off they sealed the official start of their ambitious undertaking. The main topic of the first day was to get to know one other, agree on a common understanding of all project aspects, co-create first elements of a project identity and get an insight in every work package

*"The LIFE funded project LEONARDO – started this September 2025 – aspires to support the aggregation of diverse Energy Management Systems (EMSs) with the aim of optimizing collaborative demand flexibility from industries in physical proximity."* explains **LEONARDO Coordinator Diego Viesi, Senior Researcher and Advisor in the Sustainable Territories Area at FBK's Centre for Sustainable Energy**.

Read the press release in Italian: <https://magazine.fbk.eu/it/news/il-progetto-europeo-leonardo-sostiene-la-transizione-energetica-pulita-delle-imprese-europee/>

26 SEPTEMBER 2025

## **FBK at the Research Night 2025**

From the batteries of the future to quantum selfies, from a robot that teaches healthy lifestyles to games set in historical contexts and parallel worlds that explore economic and social dynamics. The general public had the opportunity to discover and test all of FBK's research in a single night: Research Night.

As usual, the event brought together the key players of Trentino's research landscape: Fondazione Bruno Kessler, the University of Trento, Fondazione Edmund Mach, and MUSE—all engaging in dialogue and, above all, opening up to meet the student community and the wider public.

More than 3,000 attendees were counted during the evening event at MUSE—which hosted it on Friday, September 26, from 5 PM to midnight. Families, and many children, had the chance to explore the latest in scientific discovery. Visitors moved from one stand to another, between experiments, games and installations.

FBK presented 18 projects developed by as many research groups, representing the full breadth of the Foundation's expertise—from the humanities to the technical and scientific domains. In addition, two collaborative projects were featured: one with the University of Trento and one with the Edmund Mach Foundation. Even younger contributors had their moment in the spotlight—150 students from seven high schools in Trentino collaborated with FBK researchers on a study of gamma rays.



The Center for Sustainable Energy was present with two projects:

### **RENEWABLE HYDROGEN**

With FBK researchers, participants can assemble an electrolysis cell and discover how renewable hydrogen is produced. Hydrogen technologies and Resilient Energy Systems Unit – enter for Sustainable Energy – FBK

### **BATTERIES FOR A SUSTAINABLE FUTURE**

From lithium to cobalt, from vanadium to carbon: flow batteries and new-generation lithium batteries. Learn how battery recycling works and what hybrid storage is. Battery and Electrification Technologies Unit – Center for Sustainable Energy – FBK

Read the entire press release on FBK Magazine: <https://magazine.fbk.eu/en/news/fbk-at-research-night-2025/>

3 OCTOBER 2025

## **Elena Crespi speaks about hydrogen at the Wired Next Fest**

The Speck&Tech event at Wired Next Fest in Rovereto hosted Elena Crespi and Simone Angioni to explore the role of green hydrogen in the energy transition and to weigh the pros and cons of a sustainable future

At Wired Next Fest in Rovereto, Speck&Tech brought two different yet complementary voices to the stage: Elena Crespi, researcher at the Center for Sustainable Energy and Science Ambassador at Fondazione Bruno Kessler, and Simone Angioni, chemist, writer, and science communicator. Their perspectives guided the audience through the complex landscape of the energy transition, between the promises of green hydrogen and the broader challenges of building a sustainable future.

“Think of a plastic container, gasoline for your car, fertilizer for your garden, and a steel fork. My question is: what do they have in common?”

This question, which opened Elena Crespi's talk, immediately captured the audience's attention—because it concerns all of us. And the answer is not obvious: hydrogen.

Crespi explained how this molecule is already indirectly part of our daily lives, and how its production—largely reliant on fossil fuels—carries a significant environmental cost: over 900 million tons of CO<sub>2</sub> per year. These numbers clearly underline the urgency of shifting toward alternative energy systems.

Crespi led the audience into the world of electrolyzers, devices that generate hydrogen and oxygen from water using electricity—preferably from renewable sources. Among these, PEM (Proton Exchange Membrane) systems are among the most promising today, combining high-purity hydrogen production with fast response times. This makes them well-suited to operate with renewable electricity and to integrate into the power grid. At FBK's laboratories, these systems are tested at both the cell and stack level: tools like polarization curves and impedance analysis help researchers assess their performance and identify ways to make renewable hydrogen production economically sustainable as well.

Crespi's talk made it clear that hydrogen is not just a niche topic, but a key resource for the energy transition. On one hand, it offers a concrete path to decarbonizing "hard-to-abate" sectors such as steel and refining, where alternatives are still lacking. On the other hand, it can help stabilize the electricity grid by storing excess renewable energy and releasing it when needed—making the grid more resilient.

Read the full article on FBK Magazine: [in the spotlight—150 students from seven high schools in Trentino collaborated with FBK researchers on a study of gamma rays.](#)

Check the link to see the entire talk: [in the spotlight—150 students from seven high schools in Trentino collaborated with FBK researchers on a study of gamma rays.](#)

*Photo credits: Gianluca Pezzato, Wired*




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8 OCTOBER 2025

## **Luigi Crema signs the MoU between H2IT and JH2A**

In 2025, Japan hosts the [Expo 2025](#), which takes place on the artificial island of Yumeshima, located in Osaka Bay. With a surface area of 1.55 km<sup>2</sup>, the site will feature a central pavilion area flanked by water to the south and vegetation to the west.

During this international event, H2IT - Associazione Italiana Idrogeno and the Japan Hydrogen Association JH2A signed a three-year "Memorandum of Understanding" to strengthen international cooperation in the hydrogen sector

The agreement provides for the joint development of industrial and research projects, the exchange of technical expertise and the implementation of innovative solutions for mobility, industry and energy infrastructure.

The signing was attended by

- the Director of The Centre for Sustainable Energy of Bruno Kessler Foundation Luigi Crema in his role of Vice President of H2IT
- Ohira Eijii, European representative of JH2A, and
- the Hon. Giorgio Silli, Undersecretary of State at the Ministry of Foreign Affairs and International Cooperation.

According to Luigi Crema: "This agreement represents a unique opportunity to build solid and impactful industrial collaborations along the entire supply chain, strengthening cooperation between Italy and Japan and bringing hydrogen closer to a global supply chain."

The event had a great press coverage. Have a look at this file with the press articles: <https://drive.google.com/file/d/1yE52rAfQSeiCweWg1veRy-5McUXR0iZD/view?usp=sharing>

20 OCTOBER 2025

## Matteo Testi at the 6th meeting of the Italian Biosphere Reserves

On October 14-17, the Alpi Ledrensi e Judicaria Biosphere Reserve hosted the national event dedicated to the UNESCO Biosphere Reserves, an opportunity for discussion and exchange between institutions, local communities, researchers and young protagonists of sustainable development.

The meeting came at a strategic moment: a few weeks after the 5th World Congress of Biosphere Reserves (Hangzhou, China, 22-26 September 2025), where the new Strategic Action Plan 2026-2035 and the Hangzhou Declaration were adopted. Organised by the UNESCO MAB National Technical Committee and the Ministry for the Environment and Energy Security, in collaboration with the host Reserve Alpi Ledrensi e Judicaria, the meeting saw the participation of institutions, local communities, researchers and above all young people, the protagonists of the future of our Reserves.

On October 15, the Head of HyRES Unit Matteo Testi participated as invited speaker in the roundtable "Energia in transizione, comunità in azione: la sfida dell'energia rinnovabile nelle Riserve di Biosfera [Energy in transition, community in action: the challenge of renewable energy in the Biosphere Reserve]".

The interesting discussion took place in the beautiful setting of Castel Stenico and saw the participation of

- Dino Vaia – President of Consorzio Elettrico Industriale di Stenico (CEIS) and Fausto Fiorile – President of Consorzio Elettrico di Storo (CEDIS).
- Mauro Chiodega – President of the recently established renewable energy community
- Matteo Testi – Fondazione Bruno Kessler

The session was chaired by ing. Guido Zolezzi – Professor at the University of Trento.

Read more on the event website: <https://events.orkata.it/mab2025/programma/>

Source: <https://www.provincia.tn.it/en/News/Events/6th-Meeting-of-Italian-Biosphere-Reserves>

21 OCTOBER 2025

## FBK at Kilometro Rosso for the Future of Chemical Industry

Last October 16 the conference Future of Chemical Industry. Emerging path to decarbonisation was organised by Brembana&Rolle Group in the spaces of Confindustria Bergamo at Kilometro Rosso (Bergamo). Kilometro Rosso is one of the leading Italian innovation districts, a place where research and business meet, and which acts as a technology transfer agent. Today, the campus hosts 82 Resident Partners – companies, laboratories, and research centers – with its 3,000 employees and researchers.

Future of Chemical Industry aimed at providing a clear and up-to-date picture of some of the main developments in Industrial Process Chemistry.

A full day where Chemical Industries, Technologies Providers, Universities and Research Institutes, Clients and Partners of Brembana&Rolle Group, together with Investors and Finance Representatives introduced vision and mission for the future of the chemical industry and the solutions (to be) undertaken in line with energy transition and decarbonisation.

In such occasion, the Center for Sustainable Energy was presented in two main situations.

The Director Luigi Crema was an invited speaker in the roundtable "The perspective of the scientific and research institutions". With FBK, the discussion saw the participation of representatives of ENEA, Politecnico di Milano and the University of Bergamo.

The researcher Luca Praticò presented the AMON Project coordinated by the Center SE in the session dedicated to innovative start-ups.

Read more about the conference [HERE](#)



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9 DECEMBER 2025

## **FBK in Palermo for the GA of the NEST Project and the SAFE2 Event**

Three intense days, from December 3 to 5, 2025, at the University of Palermo for our researchers Gloria Gottardi and ChandraKanth Reddy Chandraiahgari, who took part in the annual assembly of the NEST project (Spoke 9 – Energy-Sustainable Advanced Materials) and the related event SAFE2 – Solar Applications For Environment 2025. These gatherings offer not only an opportunity to report on project activities, but also a space for dialogue between institutions and research, as well as networking among participants.

The NEST – Network 4 Energy Sustainable Transition project is funded by the European Union under the NextGenerationEU program and, in Italy, through the National Recovery and Resilience Plan (PNRR). It is organized into nine spokes. FBK is particularly involved in Spoke 4 (Clean hydrogen and final uses) and Spoke 9 (Energy-Sustainable Advanced Materials).

Within Spoke 9, FBK carries out numerous research activities, ranging from the development of nanocatalysts for hydrogen production to providing analytical support to project partners through advanced chemical-physical characterization techniques of materials.

During the assembly, Gloria Gottardi, coordinator of WP 9.4 “Materials Characterization and Testing”, was honored with the award for Best WP Leader.

Meanwhile, ChandraKanth Reddy Chandraiahgari presented the results of the research activities developed within WP 9.2 (Efficient preparation of sustainable materials) with a talk entitled: “Green Nanomaterial Synthesis Via RF Sputtering In Liquids And Onto Powders For Scalable, CRM-Free Catalysts For Water Electrolysis.”

More information on NEST Project: <https://fondazionecest.it/spoke/energy-sustainable-advanced-materials/>

More information on SAFE2 Event: <https://fondazionecest.it/solar-applications-for-environment-2-safe2-2025-ecodesign-and-sustainability-of-materials-systems-technologies-and-processes-in-the-energy-transition/>

