



Sustainable and Efficient Strategies for Simultaneous Circular Recycling of Iridium and Membranes in Proton Exchange Membrane Water Electrolysers

Press Release

IRION Kick-off Meeting: IRION embarks on its journey officially

The IRION project has officially started following its Kick-off Meeting, held on January 20 and 21, 2026, in Valencia, Spain, at the premises of AIMPLAS, the project coordinator. Over two days, consortium partners gathered for discussions, collaboration, and alignment on the project's vision, objectives and next steps.

The meeting offered an opportunity for partners to get to know each other better, present their organizations, and exchange views on upcoming work. Dedicated sessions were held to present and discuss the project's Work Packages, enabling the consortium to delve into the technical and organizational aspects of IRION more thoroughly and plan activities for the initial project period.

Funded under the HORIZON-JU-CLEANH2-2025-05-01 topic by the Clean Hydrogen Joint Undertaking, IRION unites 10 partners from seven European countries (Spain, France, Germany, Italy, Slovenia, the Czech Republic, and Cyprus). The consortium includes research and technology organizations, SMEs and large companies, bringing together complementary expertise across the hydrogen value chain. IRION's partnership encompasses a wide range of knowledge areas such as polymer chemistry, materials science, engineering, modeling, environmental and social assessment, and sustainable and safe-by-design approaches.

Fully motivated for the journey ahead, the IRION consortium looks forward to delivering innovative and impactful results!

What is IRION about?

IRION seeks to facilitate the shift toward a more sustainable and circular hydrogen economy by tackling the increasing reliance on critical raw materials used in water electrolyzers. By combining technological innovation, sustainability evaluation, and cross-sector collaboration, the project aims to create solutions that are both environmentally and economically sustainable.

Co-funded by the Clean Hydrogen Joint Undertaking under the Horizon Europe program, IRION supports key European policy priorities, including the European Green Deal and the Critical Raw Materials Act, supporting Europe's transition to clean, secure, and sustainable hydrogen technologies.

Our consortium

1. AIMPLAS

[AIMPLAS](#), the Plastics Technology Centre, is a private non-profit research and technology organisation based in Valencia, Spain, with extensive experience supporting innovation across the plastics value chain. AIMPLAS combines applied research, technological services and pilot-scale facilities to support circular economy solutions. In the IRION project, AIMPLAS, as coordinator of the project, contributes expertise in polymer materials, recycling technologies and process optimisation, supporting the development and validation of sustainable recycling routes for catalyst coated membranes and strengthening the industrial relevance of the project's circular solutions.

2. Fraunhofer- ENAS

[Fraunhofer Institute for Electronic Nano Systems ENAS](#) is a leading applied research institute specializing in the development of intelligent electronic systems. Its expertise spans advanced wafer and packaging technologies, electronic components, micro- and nano-sensors and actuators, as well as system concepts, integration technologies and communication interfaces, supported by state-of-the-art and AI-assisted testing and reliability methods. In the IRION project, Fraunhofer ENAS leads the tasks of Membrane and PTE coating, developing advanced CCM and PTE manufacturing methods. ENAS formulates inks using virgin and recycled iridium and applies inkjet printing of catalyst layers directly onto membranes to produce PEM-CCMs with targeted iridium loadings, supporting the validation of recycled materials.

3. VSCHT – UCT Prague

The [University of Chemistry and Technology, Prague](#) (UCT Prague) is one of Czechia's leading hubs for excellence in chemistry, technology and innovation. Ranked among the top 4% of universities worldwide, UCT Prague is recognised for its strong research performance and long-standing contribution to cutting-edge R&I activities. In the IRION project, UCT Prague, through the Group of Technical Electrochemistry, leads the performance testing of recycled PEM water electrolyser components. The team assesses membranes, ionomers and catalysts and integrates them into MEAs and full electrolysis cells, delivering critical insights that support the optimisation of recycling processes and technological performance.

4. STRATAGEM ENERGY Ltd.

[STRATAGEM ENERGY Ltd](#), based in Cyprus, is a research and innovation-driven SME supporting EU-funded projects from strategic planning to impactful delivery. Its expertise includes technical R&I support, sustainability and impact assessment, innovation and business-oriented services, as well as marketing and communication activities. In the IRION project, STRATAGEM acts as Communication, Dissemination & Exploitation Manager, leading the project's outreach strategy and contributing to exploitation activities, knowledge transfer and business model development. Through this role, STRATAGEM connects research, industry, end users and society.

5. SAFINA AS

[SAFINA a.s.](#) is a Czech industrial company specialising in precious metals and platinum group metals (PGMs), with strong expertise in refining and recycling precious-metal-bearing materials. Based in Vestec, SAFINA produces high-purity precious metal products and chemicals supported by integrated metallurgical, chemical and analytical capabilities. In the IRION project, SAFINA leads the work on the purification of ionomers and iridium recovered from end-of-life CCMs. SAFINA also plays a key role in developing and scaling recycled iridium catalysts, benchmarking their performance against commercial references and producing prototype iridium targets from recycled material.

6. SAINT GOBAIN RECHERCHE SA

[Saint-Gobain Group](#) (SG) is a French multinational and a global leader in sustainable materials and solutions. Through its R&D centers, including Saint-Gobain Research Paris (SGRP), the Group develops advanced technologies supporting innovation in energy, hydrogen and low-carbon industrial processes. In the IRION project, SGRP develops advanced CCMs and PTEs, leading the deposition of thin iridium-based catalytic layers by magnetron sputtering. Using both virgin and recycled iridium, SGRP supports reduced iridium usage, improved recyclability and circular integration, while contributing to characterisation, durability assessment and eco-design activities.

7. NIC

The [National Institute of Chemistry](#) (NIC), based in Ljubljana, Slovenia, is a leading independent research organisation and one of the country's largest institutes in natural sciences. Focused on high-quality basic and applied research, NIC bridges scientific innovation and industrial application, contributing to sustainable energy and circular economy solutions. In the IRION project, NIC plays a key role in the characterisation, purification and restoration of recycled ionomers and in the fabrication of new membranes with high recycled content using sustainable solvent approaches. NIC also leads the performance validation of these membranes to ensure their mechanical and electrochemical suitability.

8. RINA-C

[RINA Consulting](#) (RINA-C) is the engineering consultancy arm of the RINA Group, a global organisation headquartered in Genoa with a strong international presence across multiple sectors, including energy, mobility, infrastructure and industry. RINA-C provides high-value engineering and advisory services, combining technical expertise with sustainability, digitalisation and project management to support safe, efficient and sustainable solutions. In the IRION project, RINA-C leads the Integrated Sustainability Assessment, covering Life Cycle Assessment (LCA), Life Cycle Costing (LCC), Social LCA and techno-economic assessment. These activities ensure that IRION's solutions are evaluated from environmental, economic and social perspectives.

9. RINA Consulting -CSM SPA

[RINA CSM](#) is the R&D-focused company of the RINA Group and a recognised international research centre in advanced materials and sustainable technologies. RINA combines scientific excellence with strong capabilities in process development, modelling and industrial scalability. In the IRION project, RINA CSM contributes expertise in materials recovery, green chemistry and process modelling. RINA CSM supports the optimisation of solvent-based extraction processes, leads modelling activities for scale-up, and contributes to integrating cost-efficient and scalable recycling routes.

10. H2GREEM

[H2GREEM GLOBAL SOLUTIONS](#), S.L. is a Spanish technology company specialising in PEM water electrolysis, developing high-efficiency, modular and scalable hydrogen production systems across the electrolyser value chain. In the IRION project, H2Greem contributes system-level expertise and operational

validation, supporting the integration of recycled catalysts and membranes into PEM electrolyser stacks and evaluating their electrochemical performance and durability under realistic operating conditions.

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