



KNOWSKITE-X

Knowledge-driven fine-tuning of perovskite-based electrode materials for reversible Chemicals-to-Power devices

Press Release



European Funded KNOWSKITE-X Project Pioneers Cutting-Edge Energy Storage and Conversion Research

Brussels, Belgium – The European Union is committed to shifting its energy strategy towards non-carbon, non-critical, and renewable processes, and the KNOWSKITE-X project is leading the way. With 10 partners from 7 European countries and € 5.168.000 in funding, KNOWSKITE-X is pioneering innovative, sustainable technologies for energy conversion and storage.

Energy storage devices such as batteries and capacitors are essential components of the future European power grid, which will be fed with a largely increased share of inherently intermittent renewable energies. Electrolysers offer another strategy, converting excess power into H₂, a decarbonized fuel that can be used by the transportation sector. Fuel cells (FC) provide electrical power with the highest energy density, making them an ideal choice for stationary power generation in buildings and industry.

Despite their established commercial use, efforts are required to minimize the critical content of these devices, increase their efficiency, and improve their cost-effectiveness. The KNOWSKITE-X project targets a science-driven method to develop fine-tunable active materials relevant to energy conversion and storage. The project organizes a close collaboration between scientific and industrial stakeholders and targets the implementation of an interoperable rational design strategy.

The main objective of the KNOWSKITE-X project is to validate innovative, robust, and use-relevant methodologies based on multiple relevant spectroscopic characterization, multi-scale modeling, and data-enabled knowledge discovery for boosting the development of materials for energy applications by rational design. The methodology involves a combination of state-of-art preparation, characterization, machine learning, and multi-scale modelling to achieve the discovery of original and relevant scientific knowledge required to sustain the rational design of optimized candidate electrode materials.

The project seeks to broaden, deepen, and accelerate the finding of sustainable technologies. The project will demonstrate an overall approach to the development of electrode materials with reduced critical content and high performance in reversible chemical-to-power devices. The approach aims to offer wide prospects while minimizing the critical content and increasing the efficiency of these devices.

The KNOWSKITE-X project is a vital step towards the European Union's energy strategy, and its innovative methodologies could revolutionize the development of sustainable technologies. The project's results could transform the energy sector, providing a cleaner, greener future for Europe and beyond.



PROJECT INFORMATION

Project number: 101091534

Project name: Knowledge-driven fine-tuning of perovskite-based electrode materials for reversible Chemicals-to-Power devices

Project acronym: KNOWSKITE-X

Topic: HORIZON-CL4-2022-RESILIENCE-01-19

Project starting date: 1 January 2023

Project duration: 48 months

Granting Authority: European Health and Digital Executive Agency

EU Contribution: € 5.168.000,00Euro

CONTACTS

Elise Berrier | Project Coordinator

elise.berrier@univ-lille.fr

Isella Vicini | Dissemination Manager

isella.vicini@warranthub.it

