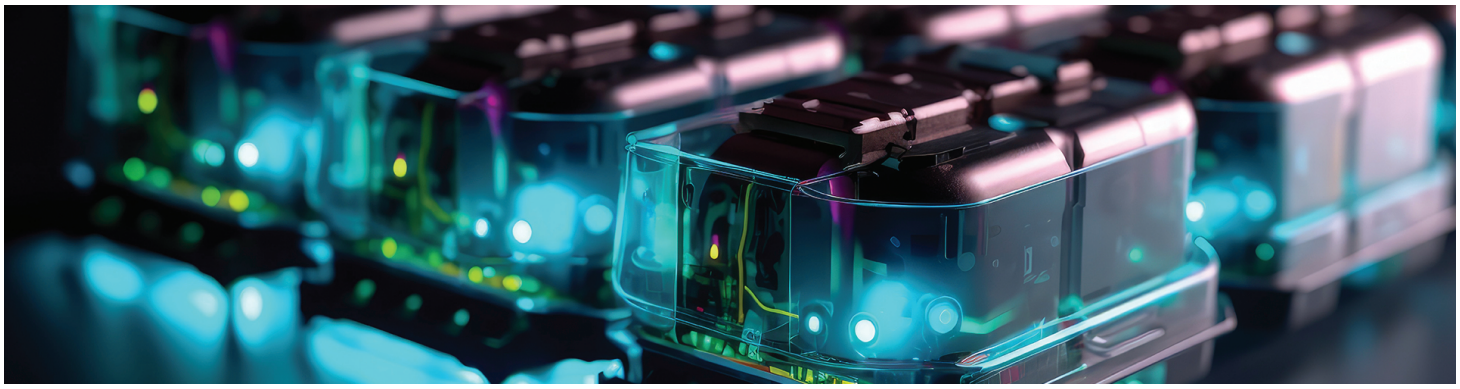


Written on 25 September 2023 3 minutes of reading

News

Innovation and Industry

Sustainable mobility | Electrified Mobility | Batteries

The MODALIS^2 project, led by the IFPEN Transports Energie Carnot Institute, has closed, offering excellent results in the field of modeling and simulation of future generations of batteries. The research is now being continued by the HELENA project.

The closing meeting of the European MODALIS^2 (Modeling of Advanced LI Storage Systems) project, led by the IFPEN Transports Energie Carnot Institute and involving 9 other European partners - Saft, Siemens Digital Industry Software, Siemens Corporate Technologies, Umicore, Solvay, K&S, CRF, Gemmate Technologies and Turin University - was held at the end of August 2023. This project, funded by the European Union's Horizon 2020 research and innovation program, generated excellent results in the field of modeling and simulation of Gen 3b and Gen 4b batteries. These future battery generations, based on new materials such as alloys with silicon for negative electrodes (Gen 3b) or solid electrolytes (Gen 4b), require ongoing upgrades of the models developed to characterize them.

The research is now being continued within the framework of the HELENA project, also funded by the European Union's Horizon 2020 research and innovation program and dedicated to "all-solid-state" batteries. The project is being led by the Spanish laboratory CIC EnergyGUNE and was launched in June 2022 (see below).

Drawing on progress made in modeling and ongoing research in numerous fields, European industry is seeking to further improve battery technology with a view to offering increasingly efficient electric vehicles with ever greater onboard energy autonomy.

Focus on… the HELENA project

The objective of the HELENA project is to develop a new, highly energy-efficient solid-state battery cell (generation 4b batteries) with a high power density, based on an Ni-rich, high-capacity NMC cathode, a high-energy Li metal (LiM) anode and an Li-ion superionic halide solid electrolyte, proposed by Saint Gobain for vehicle and aviation applications. The HELENA project will enable electric aircraft to take to the skies and Europe to take another step towards the ecological transition, at the same time reducing its reliance on Asia. The IFPEN Transports Energie Carnot Institute is responsible for the cross-functional activity dedicated to modeling, supporting all of the project's developments.

Find out more : https://helenaproject.eu/en

End of the European MODALIS2 project and launch of HELENA: on the road to the batteries of the future

25 September 2023

Link to the web page :