



The NEXTCELL project kicks off to obtain the next generation of high-performance Li-Ion battery cells

- **NEXTCELL is a project financed with almost €8 million by the European Union under the Research and Innovation Framework Programme Horizon Europe aiming to provide a new Li-Ion battery cell generation for both high capacity and high voltage applications**
- **The initiative is supported by a multidisciplinary consortium of 17 partners comprising research centres, universities, consultancy companies, material suppliers, and cell manufacturers from 10 European countries.**

Aachen (Germany), January 10. NEXTCELL, a project financed by the European Union (EU) under the Research and Innovation Framework Programme Horizon Europe willing to **provide a new Li-Ion battery cell generation for both high capacity and high voltage applications**, has just kicked off with a meeting held in Aachen (Germany).

Currently marketed cells are composed of liquid (electrolyte) and solid (electrodes, separators, etc.) materials. For 48 months, NEXTCELL, formed by 17 partners from 10 different European countries, will work to obtain the next generation of high-performance Li-Ion battery **cells by developing and validating a ground-breaking gellified cell concept**, integrating several innovations at the material level for each of the main cell components: **the gellification of the electrodes and the separator, in combination with a high voltage-stable gel electrolyte**. As a result, the cells prototyped in the project will offer a high energy density **allowing excellent performance in high power and high voltage applications**.

NEXTCELL will not only provide the European market with state-of-the-art cells but will also address three key aspects that currently hinder further market penetration of Li-Ion battery technology, such as **costs, safety, and sustainability**.

In this sense, the technology developed by NEXTCELL will optimise, first, the manufacturing processes, reducing the capital and operating costs of future gigafactories, **by avoiding the evaporation of solvents and the electrolyte filling step**. Secondly, the project will produce intrinsically safe cells, **avoiding the presence of low-boiling point components in the electrodes and the separator**. Finally, **a reduction of around 50% in energy consumption** will be guaranteed.



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Climate, Infrastructure and Environment Executive Agency (CINEA) Neither the European Union nor CINEA can be held responsible for them.

 [nextcell](https://www.linkedin.com/company/nextcell)

 [@nextcellproject](https://twitter.com/nextcellproject)
www.nextcell.eu



The pioneering NEXTCELL cell concept will revolutionise different scientific disciplines thanks, also, to the **development and use of physical-chemical models** of both the cell and its gellified components, demonstrating how the interaction between **mathematical modeling, experimentation and prototyping** provides a key methodology to optimise and accelerate the research and development process of new energy storage technologies.

Making Europe a strategic global leader in the Li-ion battery value chain

The EU has set an ambitious industry target to make Europe a strategic global leader in the lithium-ion battery value chain, financing and supporting the deployment of a sustainable and innovative industry that reduces dependency on external suppliers. In a context where international markets are influenced by production costs (energy, labor), the keystone of the European strategy lies in the knowledge-based economy. Make European industry a leader thanks to the quality of its cells and batteries.

If all the announced private projects are realised, the manufacturing capacity of Europe will grow from the current 26 GWh to approximately 500 GWh, supported by EU and national investment and R&I programmes in a virtuous public-private collaboration. This means that Europe will obtain a 16% share of the battery market by 2029, compared to current 6%. Acknowledging that current global Li-Ion battery demand is of 184 GWh, and that this demand will be multiplied by a factor of 14 in 2030 in a context of rapid evolution of Li-ion cell technologies, it is urgent to make sure that the industrial production is inherently sustainable, safe, flexible, and cost-effective while delivering cutting edge cells.

About NEXTCELL

Led by FEV Europe, NEXTCELL is formed by ABEE, Solvay, Nanomakers, Universitat Politècnica de València, Politecnico di Torino, Sintef, Inegi, CIC energiGUNE, the French Commissioner for Atomic Energy and Renewable Energies (CEA), Varta Innovation, FIAT Research Centre (CRF), Nanocyl, Univerza v Ljubljani, Sustainable Innovations, Technische Hochschule Ingolstadt.



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Climate, Infrastructure and Environment Executive Agency (CINEA) Neither the European Union nor CINEA can be held responsible for them.

