



Towards the next generation

Of high performance
li-ion battery cells

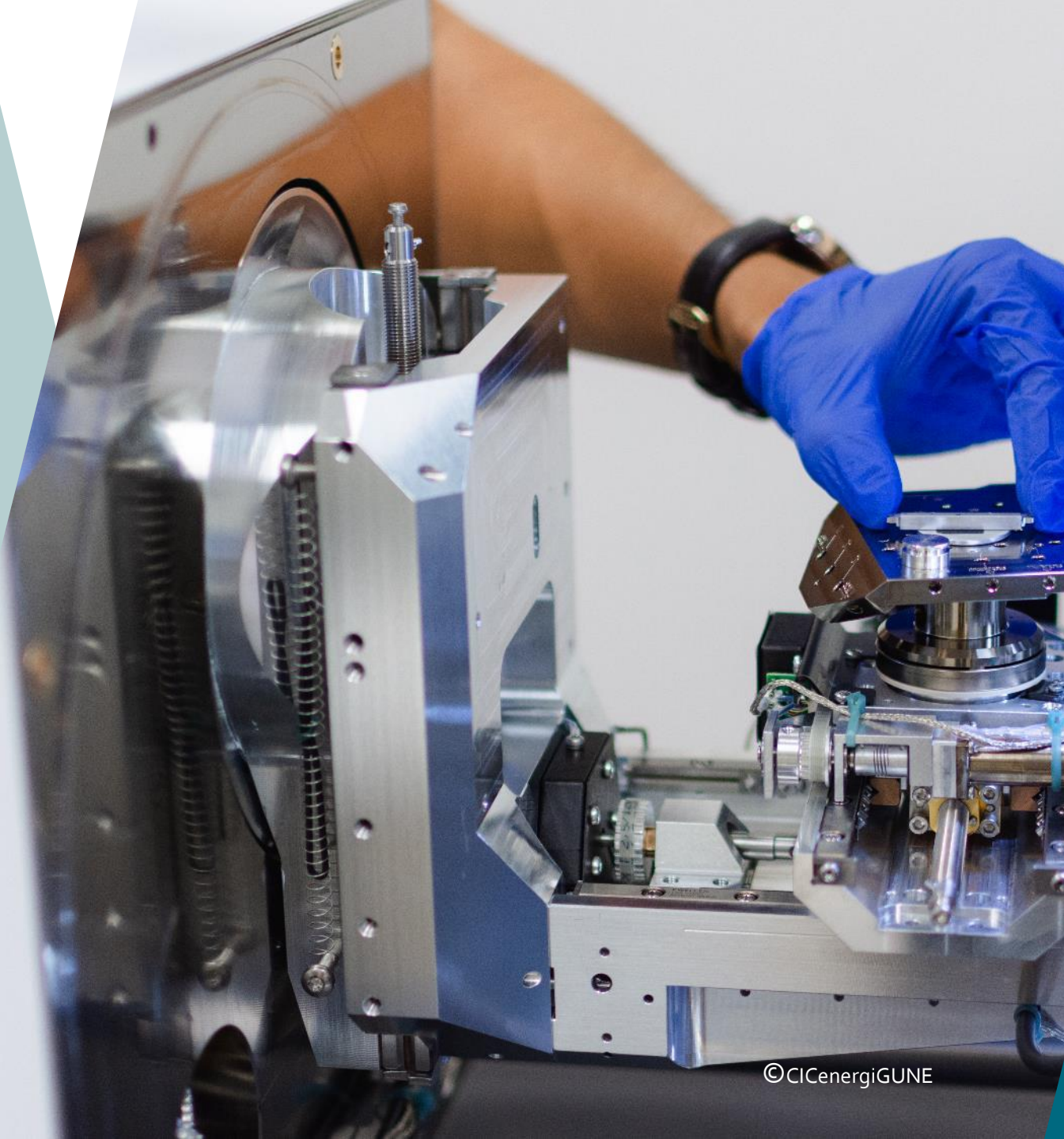


Funded by the EU. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the EU or the European Climate, Infrastructure and Environment Executive Agency (CINEA) Neither the EU nor CINEA can be held responsible for them.



About

NEXTCELL's overarching goal is to provide a **new Li-Ion cell generation for both high capacity and high voltage applications** 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 will allow the development of the full gel cell concept.

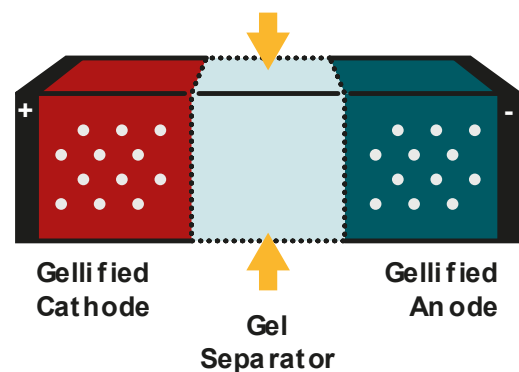


This project has received funding from the European Union's Horizon research and innovation programme under grant agreement N° 10

© CICenergiGUNE

Objectives

Gellified cell concept



High energy density. Excellent performance in high capacity and high voltage applications



Physical and mathematical models. Key methodology to optimise and accelerate the research and development process of new energy storage technologies.



Sustainable. Optimisation of manufacturing processes, reducing capital and operating costs of future gigafactories, by avoiding the evaporation of solvents and the electrolyte filling step.



Cheaper. Reduction of around 50% in energy consumption.



Safer. Intrinsically safe cells, avoiding the presence of low-boiling point components in the electrodes and the separator.



Impacts



50%

energy consumption reduction



> 70%

Recycling efficiency



> 90%

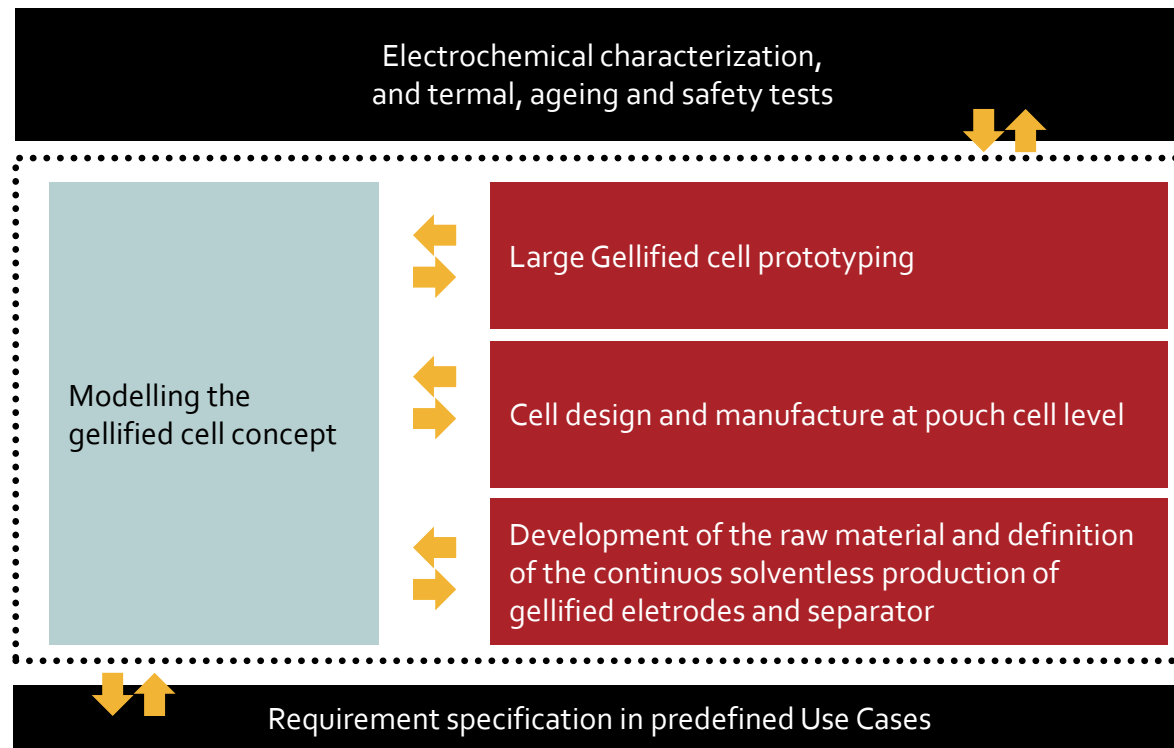
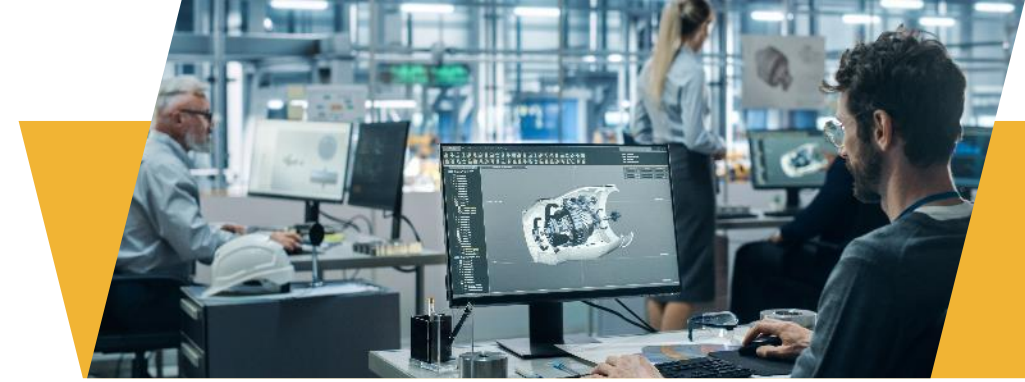
Lithium recovery



©CICenergiGUNE



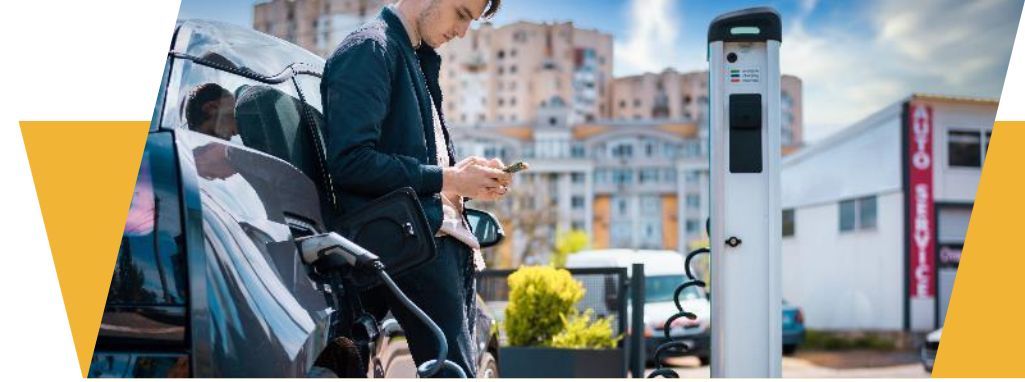
Implementation



- **Requirement specification** in predefined use cases.
- **Development** of the raw material and definition of the continuous solventless production of gellified electrodes and separator.
- **Cell design and manufacture** at pouch cell level.
- **Electrochemical** characterisation and thermal, ageing and safety test.
- Large gellified cell **prototyping**.
- **Modelling** the gellified cell concept.
- **Sustainable production and material recovery**.



Partners




Univerza v Ljubljani




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



Thank You



 nextcell

 @nextcellproject

www.nextcell.eu

