



Towards the next generation

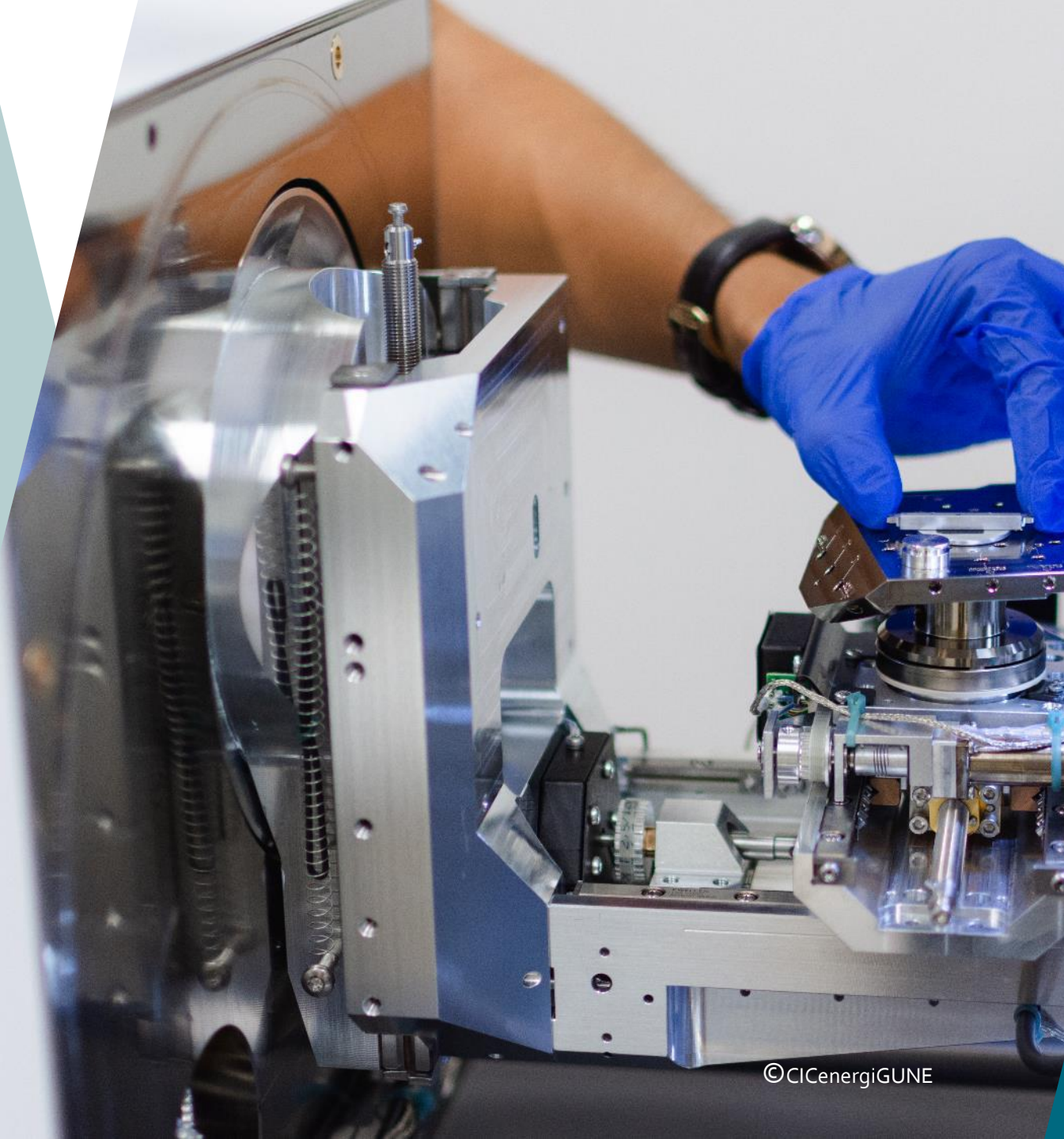
Of high performance li-ion battery cells



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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.

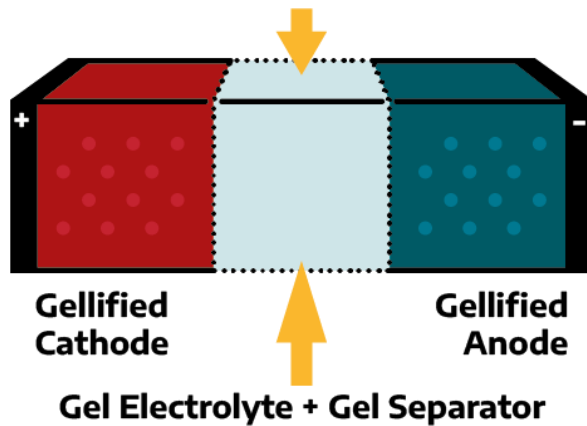


This project has received funding from the European Union's Horizon research and innovation programme under grant agreement N° 10

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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



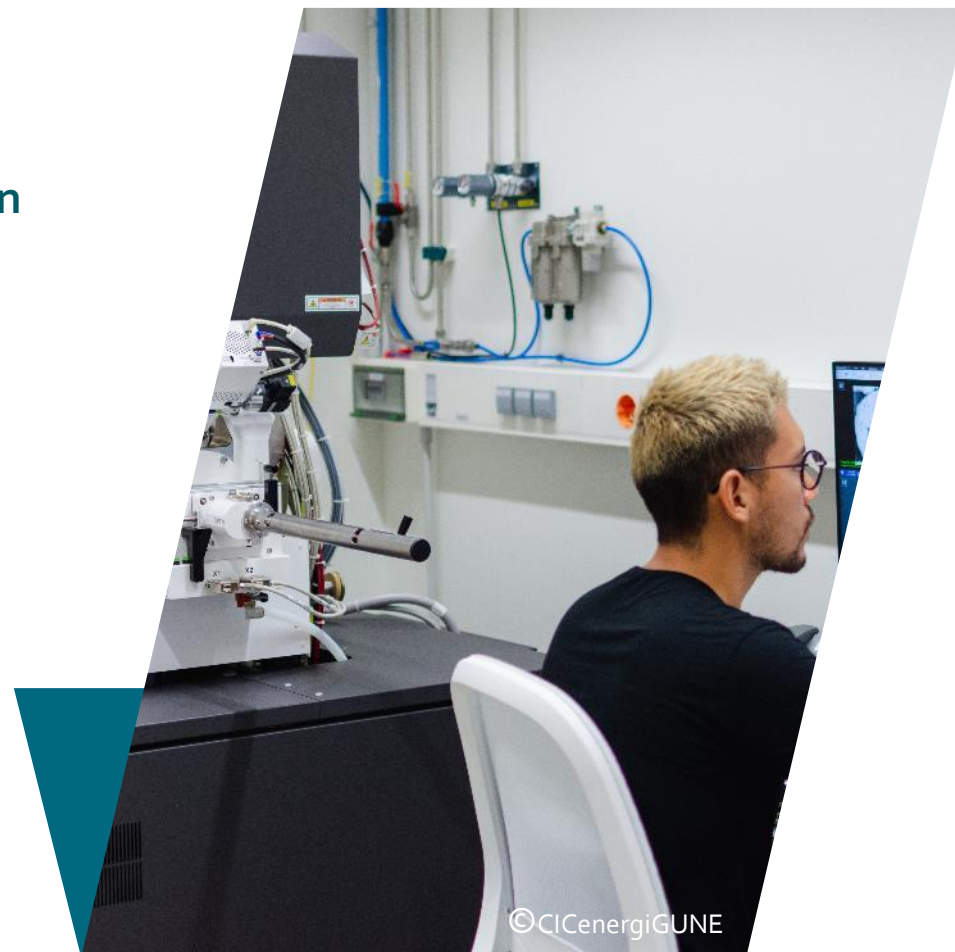
> 70%

Recycling efficiency



> 90%

Lithium recovery

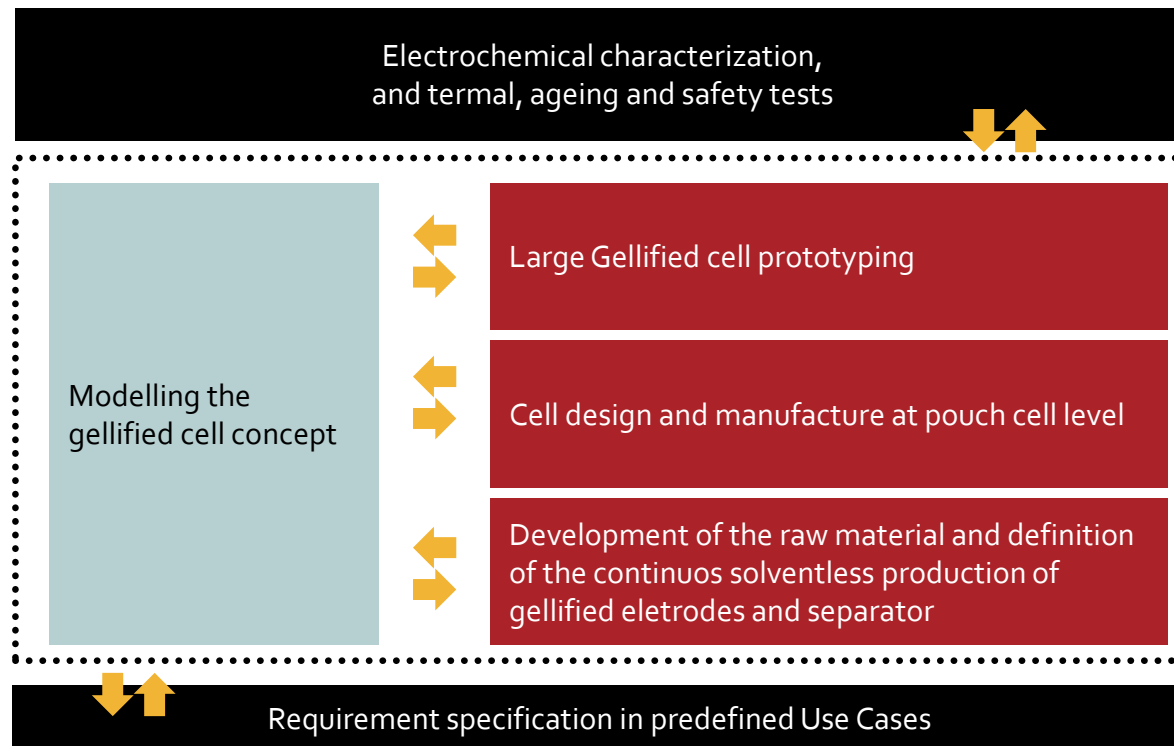
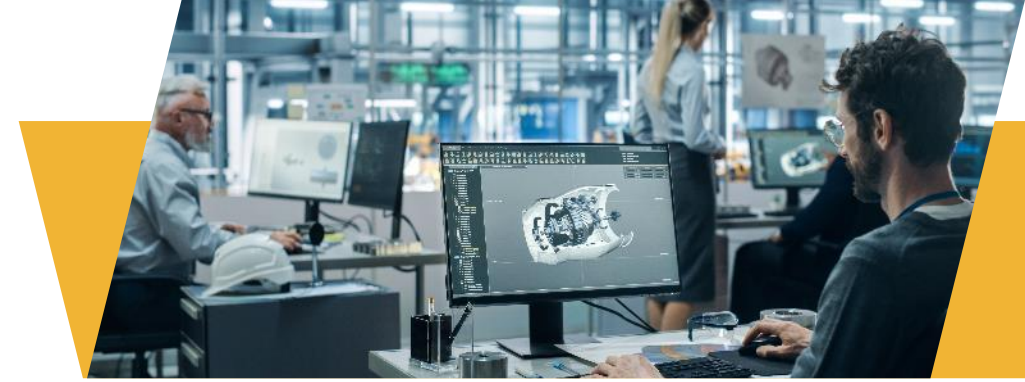


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Implementation



- **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




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Thank You



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