

## Objective

The objective of the project is to combine green and high-performance materials and to upscale their production for the next generation of high-voltage lithium-ion batteries.

## Battery Materials

- Sustainable & high energy active materials (NMC 622 of Umicore)
- Protective coatings for active materials (ORMOCER® - trademark of Fraunhofer)
- Carbons with specific porous structure (Porocarb® - trademark of Heraeus)
- Carbon nanotubes as conductive additives (Graphistrength® - trademark of Arkema)
- High-voltage electrolyte with lithium salt LiFSI (latest development of Arkema)

## Improvements

- High capacity and high voltage  
→ High energy density
- High Li<sup>+</sup> and e<sup>-</sup> conductivity  
→ High power density
- High electrode compaction  
→ High energy/power density
- Reduced electrode degradation  
→ Improved cycle life
- Reduced critical materials content  
→ Sustainability

## Consortium

**Fraunhofer** (Germany), **Arkema** (France), **Umicore** (Belgium), **SAFT** (France), **CEA** (France), **CSIC** (Spain), **ENEA** (Italy), **VITO** (Belgium), **TU Darmstadt** (Germany), and **Customcells** (Germany)

## Activities



- Upscaling of materials production to TRL 7
- Battery cell manufacturing on a pilot level
- Cell testing according to industrial standards
- Simulation of the battery cell performance
- Application of innovative recycling process