

# BAT4EVER – Autonomous Polymer based Self-Healing Components for high performant LIBs

## The BAT4EVER project focuses on

- The development of the **self-healing** battery materials and their **advanced characterization/atomistic modelling**.
- The **self-healing mechanisms** are related to prevention of
  - the **micro-damages** at Si-anodes and at core/shell structured cathodes
  - **loss of material** at cathode surfaces caused during repetitive charge and discharge cycles.
- Further targets are **assembly and manufacturing of prototypes** using the developed **self-healing materials** and
- Observation of their performances through comprehensive **real-time tests** supported by **simulation of battery cells**.

## OBJECTIVES OF THE BAT4EVER:

- Development of innovative nanostructured anode and cathode particles and electrolytes for synthesis of Self-Healing battery materials (ENW, DLR, IOL)
- Development of Ionogels for generation of Self-Healing battery components (MLU, ENW)
- Use of Advanced Characterization, Modelling and Simulation Techniques to define Self-Healing influences (UCM, UMIMORE, VUB)
- Development of assembly and manufacturing techniques for production of Self-Healing battery cells/prototypes (VUB, VES)
- Validation and tailoring of LIB properties to yield Self-Healing cells with higher performances. (VES, VUB)

## BAT4EVER CONSORTIUM:

### 4 LEADING UNIVERSITIES

- VUB (Belgium)
- MLU (Germany)
- UCM (Spain)
- UNIMORE (Italy)

### 2 RESEARCH CENTRES

- DLR – NATIONAL (Germany)
- FAAM – RESEARCH CENTER S.R.L.(Italy)

### 4 INDUSTRY PARTNERS

- ENWAIR (Turkey)
- IOLITEC (Germany)
- VESTEL (Turkey)
- CLEANCARB (Luxembourg)

