

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**.

RESULTS SO FAR

- **WP2:**
 - **Technical requirements**, significant process and safety test parameters are defined and reported (D2.1/D2.3)
 - Conditions for the **self-healing battery prototypes** are defined (D2.2)
- **WP3:**
 - **Self-healing functionality** successfully included in the ionic liquids
 - **Main parameters** for the synthesis of the **core/shell cathode material** are established (D3.2)
 - **SH-Polymers for Si-anodes** is optimized
- **WP4:**
 - **First electrochemical tests** on the self-healing cells are carried out
- **WP6:**
 - **Environmental evaluation** of the developed BAT4EVER self-healing cells is done (D6.1)
- **WP7:**
 - **Project website and LinkedIn page** are launched (D7.1)
 - 3 Issues of the project's **Newsletter** are published
 - Two **Special Issues** in Open Access journals are in opened
 - Dissemination Plan (D7.2)
 - Exploitation Plan (D7.3)

WHAT IS NEXT?

- **Proof of Functionality** of Self-Healing components and battery cells
- Manufacturing of **prototypes with new-type of Self-Healing components**
- **Safety and performance tests**
- **Atomistic modelling** of materials and **simulation of cell behavior**
- **Data management**
- **Dissemination** in scientific and social platforms
- **Exploitation** of results
- **IPR management**

