

MULTILAYER ELECTRODES AND SOLID ELECTROLYTES

PUBLICATION NUMBER: WO2020053267A1

INVENTORS: Anna Llordés Gil (CIC energigUNE), Frédéric Aguesse (CIC energigUNE), Antonio Gutiérrez Pardo (CIC energigUNE), Jakub Zagorski (CIC energigUNE), Francisco José Fernández Carretero (Fundación Tecnalia Research & Innovation), Amal Siriwardana (Fundación Tecnalia Research & Innovation), Alberto García Luis (Fundación Tecnalia Research & Innovation) and Haizea Villaverde Cendoya (Fundación Tecnalia Research & Innovation)

The present invention is related to multilayer electrodes and methods for preparing said multilayer electrodes for of solid state batteries.

As it is known, a key limitation for the successful implementation of solid state batteries in the market is to obtain a stable and efficient interface with small interfacial impedance between the solid electrolyte and the electrode; this fact being especially relevant for the anodes. In this sense, several studies have been developed in recent years but a solution is still needed. Researchers at CIC energigUNE have developed a multilayer structure that is capable of achieving conductivities above those of prior art electrolytes or electrodes based on polymeric coatings and provides for improved cycling by withstanding high current densities before short-circuiting. The coating developed allows reducing the poor contact and mechanical failure between the electrodes and the solid state electrolyte that can result from the volume changes during battery cycling. In addition to the improved properties of the multilayer, the authors have also found that the preparation of the multilayer requires no complex deposition techniques such as those of the prior art.

ADDED VALUE

- ✓ Improved ionic conductivity and interfacial properties
- ✓ Shorter coating times, uniformity of the film, thickness control, high reproducibility
- ✓ No complex deposition techniques required
- ✓ Coating process is carried out at room temperature and atmospheric pressure

APPLICATION OF THE TECHNOLOGY

- ✓ Solid state batteries

LICENSING CONTACT

Business Development Manager
businessdev@cicenergigune.com
T: +34 945 297108