OPEN POSITIONS AS MARIE CURIE INDIVIDUAL FELLOWSHIP IN "POLYMER ELECTROLYTES FOR

Company Description

CIC Energigune is a Cooperative Research Centre founded in 2007 with its headquarters in the Basque Country. Created thanks to the investments of the Basque Government and several leading companies in the energy sector, it aspires to become a true international leader in the field of energy and contribute to the industrial competitiveness of Basque companies.

Information

Deadline: 2019-06-14
Category: Business
Province: Araba / Álava
Country: Basque Country
City: Vitoria

Company

CIC energiGUNE

Main functions, requisites & benefits

Main functions

Description of the project:

Solid-state batteries using lithium metal (SSLB) are of high interest due to their potential benefits in gravimetric and volumetric energy density and safety when compared to traditional liquid electrolyte-based systems. The ever-growing need for design flexible energy storage devices for use in mobile electronics has kindled the growth of solid-state battery market. The major issue of the use of lithium metal anode is the formation of dendrites, that contribute to loss of active material, cell shorting and safety incidents. Hence, current lithium battery technology employs alternative anodes which lower the entire energy density of the battery such as graphite (~10 times lower capacity compared to metallic lithium). Lithium ion battery employing liquid electrolytes have different fraction of Li^+ cations and corresponding anions carrying the total current through the battery. In most cases liquid electrolytes have low tLi^+ <0.5. This means that less than 50 % of the charge is transferred by Li^+ cations and the majority is transferred by anions leading to concentration polarisation resulting in the formation of dendrites. For instance, such similar values (0.2-0.5) are obtained by PEO based solid polymer electrolytes.

Therefore, in order to overcome the above addressed issues, this project will focus on the synthesis of new polymers, fillers and salts with anchored anions as polymer electrolytes for solid state batteries. The feasibility of such polymer electrolytes will be tested against Li metal anodes, paving way for developing all solid-state lithium metal battery prototypes.

Requisites

Qualification requirements PhD in organic and/or inorganic Chemistry, Materials Science or related fields Research experience in polymer chemistry, Electrochemistry, Materials science, organic chemistry, surface modification Synthesis skills in Polymers, organic compounds, functional groups. Polymer processing Candidate mandatory requirements to apply to MSCA-IF: The deadline to apply to the MSCA IF 2019 call is 11th September 2019. At that date, the applicant should fulfill the following requirements: Shall be in possession of a doctoral degree or have at least four years of full-time equivalent research experience. Must not have resided or carried out their main activities in the country of Spain for more than 12 months in the 3 years immediately prior to the abovementioned deadline. Information on how to apply for application to Marie Curie Individual Fellowship can be found at European Commission Participant Portal.

Benefits

The "Electrochemical Energy Storage" area, at CIC energiGUNE, is seeking for a Postdoctoral researcher to apply for an Individual Fellowship (IF) within Marie Skłodowska-Curie actions (MSCA) of the European Union in "Polymer electrolytes for solid state batteries".