

Company Description

CIC energiGUNE is a research center specialized in energy, electrochemical storage (batteries and supercapacitors), thermal energy solutions and hydrogen, a member of the Basque Research and Technology Alliance- BRTA, and, a strategic initiative of the Basque Government. CIC energiGUNE was created in 2011 to generate excellent knowledge and at the same time useful for the Basque business network, being a reference in knowledge transfer. CIC energiGUNE has a dynamic research team of more than 100 researchers and is extremely well equipped with a wide range of up-to-date facilities that are fully available for all its researchers. Also, the European Commission has recently awarded CIC energiGUNE with the 'HR Excellence in Research' which reflects its commitment to achieving fair and transparent recruitment and appraisal procedures and certifies the existence of a stimulating and favorable work environment for researchers in the institution. For more details on CIC energiGUNE's Research activities please visit our website at: <http://www.cicenergigune.com>

Information

 **Deadline:** 2021-06-27
 **Category:** Business
 **Province:** Araba / Alava

 **Country:** Basque Country
 **City:** VITORIA-GASTEIZ

Company

CIC energiGUNE



Main functions, requisites & benefits

Main functions

Rechargeable batteries are the key to transitioning away from fossil fuel dependence. Current Li-ion batteries use carbonate-based liquid electrolytes which are flammable and can leak (making them inherently unsafe). On this regard, solid polymer electrolytes (SPEs), which comprise a lithium salt and an elastic polymer matrix, have been investigated as important candidates for enhancing the energy density and safety of the next-generation rechargeable lithium metal batteries (LMBs), due to their good flexibility, no-leakage, less-flammability, light weight, and good compatibility with Li metal. However, before we can see the full potential of SPEs, important fundamental limitations must first be addressed, such as the low ionic conductivity, lithium dendritic growth, polarization of the battery during operation at high currents related to low transport number, and overall short battery life. Thus, the search of new polymer and lithium salt chemistries raises as a promising strategy to solve aforementioned issues. CIC energiGUNE is seeking an Experienced Researcher to engage in the research and development of new electrolytes with a wide experience in the field of organic synthesis. Job Functions: Synthesis and characterization of polymer electrolytes, organic plasticizers, lithium salts, and related materials. To characterize the materials using analytical instruments. To proof concept study of polymer-based solid batteries at the lab level. To collaborate in writing proposals to secure funding from government and industrial sources. Techniques to be used: Standard operating procedures for organic and polymer synthesis. Structural and physico-chemical characterization: nuclear magnetic resonance spectroscopy (NMR), Fourier transform infrared spectroscopy (FTIR), Raman, ICP, X-ray diffraction, elemental analysis, gel permeation chromatography (GPC), mass spectroscopy (MS), differential scanning calorimetry (DSC), thermogravimetric analysis, scanning electron microscopy (SEM). Electrolyte preparation, cell integration, and component characterization. Electrochemical testing.

Requisites

PhD in Chemistry / Organic Chemistry / Polymer Chemistry or a related field is required. Wide experience in synthesis of organic materials. Experience in analytical analysis techniques such as NMR, FTIR, DSC, TGA, and electrochemical workstation. A highly motivated person and a team player who can collaborate with other scientists. Good verbal and written communication skills in English. Spanish and Basque are optional but not compulsory.

Benefits

A 36 month position within an industrial collaboration in the field of solid-state batteries. The selected candidate will be part of a team up to five researchers working for the same project goal. A competitive basic salary augmented by important benefits such as special conditions for a private health insurance that compare favorably with the best global private and public institutions. CIC energiGUNE will also help smooth the transition for you and your family, providing a welcome programme that offers accommodation and addresses, other aspects to help you integrate into the local environment.