Call reference number	(2025-02)
Call name	Postdoctoral Researcher – Fit-to-Purpose power source integration
Application Deadline	2025/02/15

Introduction and main description

The upcoming wave of power hungry Internet-of-Things (IoT) sensing nodes will strongly increase the primary battery demand in the near future thus aggravating the environmental impact associated to its production and the generation of waste electrical and electronic equipment (WEEE) after its operation lifetime.

We are looking for a postdoctoral researcher to work on the RETROFIT project, funded by the Ministry of Science and with an estimated completion date of 09/30/2027.

This project proposes to develop a new battery concept based on the principles of ecodesign and circular economy. Thus, batteries will be designed and fabricated to ensure an optimal use of resources while reducing their potential environmental impact throughout their whole life cycle. In this way, the project aims to change the current paradigm of portable batteries from a 'one-size-fits-all' to a new ´tailor-made' model where batteries are ecodesigned to fit the life cycle of the device to be powered.

Skills and Requirements

Required:
- PhD in Physics, Chemistry, Electrochemistry, Materials Science or Engineering
- Robust knowledge and experience in energy storage devices, such as batteries and supercapacitors.
- Electrochemical characterization techniques.
- Implementation of low power electronics.

Desired:
- Knowledge of electroanalytic techniques.
- Robust knowledge and experience in biobased hydrogel preparation and conjugated polymers.
- Experience in preparation and characterization of organic species, hydrogels and polymers with redox activity.
- Experience in preparation and characterization of organic materials.
- Knowledge of rapid prototyping and additive manufacturing techniques, including printed electronics.

Work Program / Duties / Responsibilities

Design and fabrication of battery and supercapacitor prototypes.
Implementation of electronic circuits and wireless communication devices.
Electrical characterization of electrodes.
Electrochemical characterization of electroactive species.
Evaluation of ionic conductivity of biobased polymer electrolyte membranes.

Work Program / Duties / Responsibilities
Battery performance characterization. Preparation of samples for biodegradability and compostability assessment.

Application Procedure
Apply by submitting a motivation letter and a CV (in English) using the "Contact" button at the corresponding offer, at the "Join Us" area on BCMaterials' portal (https://www.bcmaterials.net/join-us). Your name and email address will be required for furher contact too.

Other Relevant Information
The applicant must have excellent interpersonal and communication skills, as well as excellent written and oral command of English. Pro-active attitude and ability to work independently in an interdisciplinary team. Spanish knowledge would be an advantage. We provide a highly stimulating environment with state-of-the-art infrastructures, and unique professional career development opportunities. We offer and promote a diverse and inclusive environment and welcomes applicants regardless of age, disability, gender, nationality, ethnicity, religion, sexual orientation or gender identity.