

<b>Call reference number</b>	(2024-13)
<b>Call name</b>	Postdoctoral Researcher – Fit-to-Purpose power source ecodesign and characterization
<b>Application Deadline</b>	2024/11/20

### 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 battery fabrication, modelization and characterization.
- Electrochemical characterization techniques.

Desired:

- Experience in multi-physics modeling for battery performance prediction
- Robust knowledge and experience in biobased hydrogel preparation and redox polymers.
- Experience in preparation and characterization of organic species, hydrogels and polymers with redox activity.
- Experience in pyrolysis of organic materials.
- Basic knowledge of electronics.
- Knowledge of rapid prototyping and additive manufacturing techniques, including printed electronics.

### Work Program / Duties / Responsibilities

Design, modelization and fabrication of battery prototypes.  
 Electrical characterization of battery electrodes.  
 Electrochemical characterization of electroactive species.  
 Evaluation of ionic conductivity of biobased polymer electrolyte membranes.  
 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 further 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.