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| Call reference number | (2024-05) |
| Call name | Postdoctoral Researcher – Biodegradable battery ecodesign and characterization |
| Application Deadline | 2024/04/14 |

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| Introduction and main description |
| <p>BCMaterials, Basque Center for Materials, Applications and Nanostructures, is an autonomous research center launched in June 2012 by Ikerbasque, the Basque Foundation for Science and the University of the Basque Country (UPV/EHU) as a research center for Materials, Applications and Nanostructures. The center is included in the BERC's (Basque Excellence Research Centers) network and its mission is to generate knowledge on the new generation of materials, turning this knowledge into (multi)functional solutions and devices for the benefit of society.</p> <p>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.</p> <p>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.</p> <p>The purpose of the postdoctoral position is research in the NABICO project - PID2022-139250OB-C31 approved by the Ministry with an estimated completion date of 08/31/2026.</p> |

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| Skills and Requirements |
| <p>Required:</p> <ul style="list-style-type: none"> - PhD in Physics, Chemistry, Electrochemistry, Materials Science or Engineering - Robust knowledge and experience in battery fabrication and characterization. - Knowledge of electrical conductivity characterization of films and structures. - Electrochemical characterization techniques. <p>Desired:</p> <ul style="list-style-type: none"> - 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. - Knowledge of rapid prototyping and additive manufacturing techniques, including printed electronics. |

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| Work Program / Duties / Responsibilities |
| <p>Design and fabrication of battery prototypes.</p> <p>Electrical characterization of carbon-based electrodes.</p> <p>Electrochemical characterization of electroactive species.</p> <p>Evaluation of ionic conductivity of biobased polymer electrolyte membranes.</p> |

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 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.