Call reference number	(2026-33)
Call name	Post-doctoral position within the IKUR program. Thermal Response Integrated Components for Smart Batteries (Tric-bat).
Application Deadline	2026/12/15

Introduction and main description

BCMaterials – the Basque Center on Materials, Applications and Nanostructures – is an independent research center located in Leioa, Spain, and is part of Ikerbasque (the Basque Foundation for Science) and the University of the Basque Country (UPV/EHU). Learn more about us at www.bcmaterials.net.

We invite applications for a **post-doctoral researcher position in Materials Science** as part of the TRIC-BAT IKUR project, funded by the prestigious **IKUR program**. This is an exciting opportunity for motivated early-stage researchers to contribute to cutting-edge developments in next-generation energy storage technologies by using advanced neutron scattering.
The project focuses on **solid-state electrolytes (SSEs)** for lithium-ion batteries, addressing the safety and performance limitations of traditional organic liquid electrolytes. Our research aims to:

- Develop SSEs with enhanced ionic conductivity and lithium transference.
- Incorporate **self-healing** and **self-sensing functionalities** to improve battery lifespan and reliability.
- Explore **reversible shutdown mechanisms** using phase-change materials and thermoresponsive polymers for safer battery systems.
- Apply advanced techniques such as **solid-state NMR**, **quasielastic neutron scattering (QENS) and Small-angle neutron scattering (SANS)**, and **nanoscale simulations** to investigate lithium diffusion and interfacial dynamics.
- Establish fundamental design principles for high-performance **solid-state batteries (SSBs)** tailored for future technological applications.

This position offers not only excellent scientific training but also a robust foundation in **transferable skills**, thanks to strong collaborations with leading academic institutions and innovative start-ups in the nanomaterials and energy storage sectors as well as neutrons large-scale facilities.

The position is funded under the TRIC-BAT research project with a finishing date on 31/12/2028.

Join us in shaping the future of sustainable energy storage.

Skills and Requirements
The candidate must have a PhD in Materials Science, Physics, Chemistry or related areas. A background in energy storage is desirable but not compulsory. Knowledge in advanced structural characterization techniques, is also desirable. Proficiency in speaking and writing in English. Self-motivated and ability to work in a team and willing to coordinate the research in a particular topic. A high level of motivation and independent thinking abilities. Ability and eagerness to learn new skills outside his/her own discipline. Presentation skills and being able to meet the deadline are also required.

Work Program / Duties / Responsibilities
The selected candidate will work at the forefront of materials science, with a primary focus on the design, synthesis, and integration of novel materials for smart solid-state electrolytes. The goal is to create innovative battery systems with enhanced performance, safety, and durability. Key Responsibilities: - Knowledge and experience in the field of sustainable chemistry, in particular the sustainable synthesis of monomers and functional polymers that can be used in energy storage. - Advance fundamental understanding of the physical principles that underpin polymer/smart capabilities composite synthesis and processing. - Advance fundamental understanding of ion transport at solid electrolyte-electrode interfaces. Research Environment: The postdoc candidate will be fully embedded in a dynamic and multidisciplinary team at BCMaterials, with access to state-of-the-art facilities and equipments. The project involves active collaboration with leading international research groups in Europe and beyond, providing an excellent platform for scientific growth, networking, and career development. The postdoc candidate will join to the Energy Research Line under the supervision of Dr. Manuel Salado, (Ikerbasque Research Fellow) and Dr. Viktor Petrenko (Ikerbasque Research Fellow). This position offers a unique opportunity to contribute to cutting-edge research in sustainable energy storage while receiving comprehensive training in both technical and transferable skills

Application Procedure
Apply by submitting a motivation letter and a CV (in English), besides a recommendation letter and/or a list of referees (if possible), 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
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.