OFICINA DE PROYECTOS EUROPEOS
SECTI

MSCA Postdoctoral Fellowships 2026

EXPRESSION OF INTEREST - SUPERVISOR

Supervisor Profile:

Name and Surname: Mariela G. Ortiz
Position: Senior Researcher in Li-ion Battery
Department/Unit/Centre: Electrical Energy Storage Department. Iberian Centre for Research in Energy Storage

a) Describe your qualifications and experience. Provide information regarding your level of experience on the research topic proposed and your track record of work (e.g., papers, projects, main international collaborations, patent etc.), highlighting which scientific, technical and soft skills you will transfer to the candidate during the implementation of the research project.

*Dr. Mariela G. Ortiz has extensive experience in electrochemical energy storage, particularly in the **development, synthesis, characterization, and evaluation of advanced materials for lithium-ion batteries** and related technologies. Her research activity includes publications in **high-impact international journals**, **participation and coordination of national and international research projects, and collaborations with research groups** from Argentina, Spain, Czech Republic, Chile, and other countries. Her expertise covers **cathode, anode, and solid electrolyte materials, electrochemical characterization, degradation studies, and sustainable energy storage systems**. During the proposed project, she **will transfer scientific and technical expertise in electrochemistry, battery materials, and advanced characterization techniques**, together with skills in international collaboration, multidisciplinary teamwork, mentoring, and scientific communication.*

b) Show your level of experience in supervising/training students and researchers, especially at advanced levels (i.e., PhD and postdoctoral researchers).

*Dr. Mariela G. Ortiz has significant experience in the supervision and training of students and early-career researchers in the field of electrochemical energy storage and battery materials. She has **supervised more than 10 final degree projects, directed one completed PhD thesis, and currently supervises three ongoing doctoral students**. In addition, she has **mentored junior researchers, postdoctoral collaborators, technical staff, and CONICET researchers and technicians.** At CIIAE, she currently supervises several PhD students and young researchers working on lithium-ion batteries, degradation studies, and advanced materials for energy storage, including **a Juan de la Cierva junior researcher focused on the study of battery degradation processes through modelling approaches.** Her mentoring experience combines scientific guidance, experimental training, data analysis, scientific writing, and the development of collaborative and multidisciplinary research skills.*

What we offer (Research support):

Research facilities:

Research facilities: The Iberian Centre for Research in Energy Storage (CIIAE), integrated within the structure of FUNDECYT-PCTEX, is a public research centre focused on the development of advanced energy storage systems to address current and future societal and technological challenges associated with renewable energy integration and energy transition. FUNDECYT-CIIAE currently operates five laboratories located at the University of

Extremadura facilities, equipped with advanced scientific instrumentation for ***materials characterization, including Raman spectroscopy (in-situ and in-operando), TGA, DSC, XRD (in-situ and in-operando), ICP, FTIR, DLS, XRM, and AFM, among others.*** *In addition, the centre has dedicated facilities for the preparation and* ***electrochemical characterization of electrode materials for lithium-ion battery technologies, including presses, film applicators, vacuum ovens, mixers, potentiostats/galvanostats (IVIUM, VIONIC, AUTOLAB, GAMRY, and BIOLOGIC), and battery cyclers (LANDT and ARBIN).*** *The Department of Electrical Storage is composed of a* ***multidisciplinary team of senior and junior researchers with extensive expertise in energy storage technologies, providing an excellent scientific and collaborative environment for the successful implementation of the project****.*

Networking possibilities & external relations:

The research environment surrounding Dr. Mariela G. Ortiz provides ***strong opportunities for networking and international collaboration in the field of electrochemical energy storage****. Her scientific career includes collaborations with research groups and institutions from Spain, Czech Republic, Chile, Italy, England and Argentina, which have resulted in joint publications, invited lectures, conference presentations, and collaborative research activities. She has participated in international conferences and workshops related to lithium-ion batteries, fuel cells, and advanced materials, establishing active connections with researchers from Europe and Latin America. In addition****, her current position at CIIAE offers access to multidisciplinary collaborations with both academic and industrial partners*** *working on battery technologies, degradation analysis, advanced characterization, and sustainable energy storage systems. These collaborations provide an excellent framework for knowledge exchange, future joint projects, scientific dissemination, and the development of international research networks.*

Project idea/position (scientific requirements, topic, discipline):

Possible research topics could include:

- ***Recovery, recycling, and reuse of active materials from lithium-based batteries.***
- ***Design and development of more sustainable electrode materials for next-generation batteries.***
- ***Development of lightweight and safer materials for lithium-ion battery technologies.***
- ***Improvement of electrochemical performance in terms of energy density, cycling stability, and fast-charging capability***
- ***Study of battery degradation mechanisms under different operational conditions (Modelling and prediction of battery behaviour***
- ***Development of solid-state battery technologies, including solid electrolytes, interfaces, and electrode integration for improved safety and energy density.***
- ***Design and development of multifunctional battery systems integrating embedded sensors for real-time monitoring of temperature, pressure, strain, and state-of-health.***

The research activities would be framed within the disciplines of electrochemistry, materials science, battery technology, and sustainable energy storage systems