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Deadline for application: 25th October 2026

Ref. 2026/80

Code:

Project: **MONOLITH**

Area: Advanced Materials for Energy applications

Group: Nanoionics and Fuel Cells

Group leader: Dr. Albert Tarancón

PI: Albert Tarancón

T2.1 – Research Engineer for Development of Solid-State Ionics Devices

Description:

The Nanoionics and Fuel Cells Group is seeking a motivated and hands-on Research Engineer to support the development of **next-generation ceramic devices for energy and information technologies**. The position focuses on the design, fabrication and characterization of advanced solid-state ionic devices, ranging from electrochemical energy conversion and storage systems to emerging hardware for neuromorphic computing.

The successful candidate will contribute to the development of complex ceramic devices based on ionic transport phenomena, including **Solid Oxide Electrolysis Cells (SOECs)**, **advanced ceramic batteries**, and **Solid Oxide Synaptic (SOS) devices** for information processing. The work will cover the full innovation chain, from materials synthesis and processing to device fabrication, integration and performance evaluation.

Particular emphasis will be placed on the development of novel device architectures enabled by advanced ceramic manufacturing approaches, including additive manufacturing, scalable fabrication techniques and microstructural engineering. The candidate will participate in the fabrication of functional materials and components, assembly of prototype devices, development of testing platforms, and electrochemical and electrical characterization under relevant operating conditions.

The research combines materials science, solid-state ionics, electrochemistry and device engineering to address key challenges in sustainable energy technologies and next-generation computing hardware. The developed technologies have potential applications in hydrogen production, energy storage, sensing and bio-inspired information processing.

This position offers the opportunity to work at the forefront of advanced ceramic technologies within a dynamic and internationally recognized research team with extensive expertise in solid-state electrochemical devices, advanced functional materials and emerging computing concepts.

We are looking for a proactive, detail-oriented and solution-driven researcher or engineer who enjoys experimental work and is motivated to contribute to the development of disruptive technologies at the intersection of energy and information.

Qualifications and experience required

Essential

The call is open to candidates of any nationality fulfilling the following criteria:

- Degree in Materials Science, Chemical Engineering, Industrial Chemistry, Chemistry, Physics, Nanoscience, Energy Engineering, Electronic Engineering or related disciplines.
- Minimum one year of experience in laboratory work related to functional materials, electrochemical devices or advanced materials processing.
- Experience in ceramic materials processing, fabrication or characterization.
- Familiarity with electrochemical systems, solid-state ionics or functional electronic materials.
- Fluent in English.

Preferred

- Experience in materials science for energy or information technologies.
- Experience in advanced ceramic manufacturing techniques, including additive manufacturing, thin-film deposition, microfabrication or related processing methods.
- Knowledge of solid-state ionics, electrochemistry, fuel cells, electrolyzers, batteries, memristive devices or neuromorphic hardware.
- Experience in structural, microstructural, electrical and electrochemical characterization techniques.
- Skills in device fabrication, prototyping, system integration and experimental setup development.
- Experience with CAD design and engineering software.
- Basic skills in data analysis, scientific programming and automation tools.
- Good communication skills and ability to work effectively in multidisciplinary research teams.
- Knowledge of Spanish and/or Catalan will be positively considered.

Personal skills

- Strong teamwork and collaboration skills.
- Proactive and flexible attitude.
- Problem-solving mindset with the ability to identify practical solutions.
- High level of organization and attention to detail.
- Commitment to laboratory safety and good scientific practices.

Application documents

Applicants must submit the following documents by email to irecjobs@irec.cat and atarancon@irec.cat (please include the “**Research Engineer SSI devices Ref 26/080**” in the subject line).

Required documents:

- Curriculum Vitae, including education and relevant professional experience.
- BSc and MSc transcripts.
- Motivation letter.

Offer details

We offer a Research Engineer position within the framework of the **MONOLITH** project, with an initial duration of **12 months**. Salary will be determined according to IREC's salary policy and will depend on the candidate's qualifications and experience. The selected candidate will join a dynamic research environment with access to state-of-the-art facilities and opportunities to contribute to the development of advanced technologies for hydrogen and sustainable e-fuel production.

The **expected starting date** is **October-November 2026**.

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