JOB OFFER

JUNIOR RESEARCHER

Position: Junior researcher in low temperature electrolysis
Offer date: CIIAE web
Project: CIIAE - REF. IJ- ELECTROLISIS (HIDRÓGENO Y POWER-TO-X)
Department: Hydrogen and Power-to-X
Estimated starting date: 2023

Workplace:	University of Extremadura. Cáceres campus
Tasks to be develped:	Electrochemistry is crucial for studying hydrogen production behaviour and electrochemical reactions, especially in low-temperature electrolysis. This technique allows for a detailed understanding of membrane and catalyst materials structures, which can be fully characterized through traditional and new experimental methods. Researchers can gain insights into fundamental electrolysis processes and explore uncharted territories. Developing new and optimizing existing materials to improve low-temperature electrolysis efficiency is a primary objective. Electrochemical and chemical techniques play a critical role in advancing energy production and storage development. The selected candidate is expected to perform the following tasks: – Electrochemical characterization of electrolyzers and polarization curves. – Commissioning of laboratory scale electrolyzers. – Develop materials and perform proofs-of-concept for industrial applications. – Studying the electrocatalytic properties of catalysts the HER/OER in acid/alkali media. – Developing new anion exchange membranes (linear or crosslinking polymers, blends, composite) – Apply electrochemical characterization techniques, such as CV, LSV, impedance measurements IES, RDE, RRDE, among others. – Common chemical characterization such as FTIR, Raman, TG, DSC, SEM, and XRD, among others. – Writing 1.5 papers per year as first author or co-author and high-ranked journal. – Collaborate with other researchers in the team and in interdepartmental projects from CIIAE and beyond. – Perform clear and accurate analyses and presentations of the results obtained. Document and present research reports at congresses and scientific publications. – Writing research proposals and contributing towards acquisition of competitive funding, both private and/or public – Daily guidance of PhD and master students. – Good time management with respect to tasks. – Identify areas of opportunity and propose innovative projects ideas for the development of new materials and the optimization of existing ones to improve hydrogen production efficiency. – Successful collaboration with universities, research institutes and companies at the national and international level – Becoming gradually more independent, in order to conduct, manage and lead an independent project Challenges: Achieve a complete understanding of the new designed materials electrochemical properties to replace commercial materials. Constantly search for strategies to improve the efficiency of electrolyzers.

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Duration of the contract and salary:	Temporary Contract Initial duration: September 2025, with the possibility of extension	Gross Salary + S.S. Fees Gross Salary Range: 35 000 € - 38 000 €
Academic background required:	Doctoral degree in materials science, electrochemistry, chemistry, organic chemistry, engineering, or related disciplines	
Other education:		
Professional experience:		
Job requirements (have to be fulfilled):	**Specific techniques (analytical, software, calculations, prototyping, etc.)**	– Experience in electrochemical techniques characterization – Development and/or characterization of high efficiency electrocatalysts for alkaline electrolysers. – Development and/or characterization of anion exchange membrane or Experience on polymeric organic synthesis – Analytical skills, for example IES analysis – Excellent analyses and presentations of the results obtained – Physicochemical transport knowledge
	Participation and/or collaboration in R&D&I/business projects	Proven participation on at least 1 R&D projects
	Languages	Excellent oral and written skills in English
	Cross-cutting competences	– Commitment to open science in terms of research methods, data and publications – Keep updated on the latest trends and advances in the field of electrochemistry and hydrogen production. – Ability to work in a diverse and flexible academic environment in a team-oriented, but independent way. – Experience on collaborating with other colleagues from the same department and beyond
	Willingness to travel and stay abroad	The candidate is expected to travel, both nationally and internationally, in the context of projects and conferences
	Publications: scientific articles (in journals indexed in Web of Science and/or Scopus), theses (PhD and/or Master's), presentations at conferences, reports, technical reports, technical guides, etc.	Strong track-record of publications as first author and co-author as the candidate is expected to publish in top journals in the field. At least 3 publications in Scopus indexed journals. Alternatively, a monograph thesis may also be considered, as well as a patent or a patent in the process of verification.

To be evaluated (adds points to the final evaluation):

– Experience with electrospinning.

- Experience with electrolyzers characterization.
- Experience in writing project proposals and work plans.
- Grades in Master's degree (to be include in the application).
- Experience is scaling up from lab-findings to prototypes.
- Knowledge of or collaboration with modelling and simulation, e.g., atomistic simulations and/or CFD.
- Knowledge of Spanish and/or Portuguese.
- Experience with industrial collaborations and/or previous experience working on industry.
- Proven experience in supervising PhD and/or master students (daily supervisor).
- Motivation letter (maximum 2 pages) included in the application.
- Evaluation provided by 2 references via telephone conversation. The contact details of the references (e-mail and telephone) are provided by the candidates in their application.

Selection process details:

Technical test: NO

Language (English): yes **(will be evaluated during the interview)**

Job interview: yes

Interested candidates:

Please, send all the documents requested by the terms and conditions of the call for the proposal, with the deadline being 15 calendar days from the day following the publication in the CIIAE web indicating the following reference: **Ref IJ-ELECTROLISIS (HIDRÓGENO Y POWER-TO-X)**

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