JOB OFFER

SENIOR RESEARCHER

Position: Senior Researcher in photocatalysis
Offer date: CIIAE web
Project: CIIAE – Ref. IS-FOTOCATÁLISIS (HIDRÓGENO Y POWER-TO-X)
Department: Hydrogen and Power-to-X
Estimated starting date: 2023

Workplace:	University of Extremadura. Cáceres campus	
Tasks to be developed:	The photochemical and photoelectrochemical conversion of CO_2 and/or water into fuels and chemicals with solar light is an attractive and sustainable alternative to the mass utilization of fossil resources. The selected candidate is expected to perform the following tasks: – Developing an attractive research agenda in the field of photochemistry, such as CO_2 conversion and water splitting. – Acquisition of competitive funding, both private and/or public, e.g., predoctoral students and postdocs. – Successful Collaboration with universities, research institutes, and companies at national and international levels. – Successful guidance of postdocs, predoctoral, and master students, i.e. to meet their own requirements. – Writing papers as first authors (e.g., 1 paper p.a.) in a high-ranked journal. – Project management and project administration (internal and external), also towards the department and CIIAE. Challenges: Increasing the efficiency, reducing the cost, improving the lifetime, and reducing the environmental impacts of green and synthetic fuels through photochemical and photoelectrochemical conversion.	
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: 45.000 €
Academic background required:	A PhD in material sciences, chemistry, chemical engineering, or similar, with previous experience in photochemical and/or photoelectrochemical processes related to energy.	
Other education:		
Professional experience:	– At least 2 years of post-doctoral experience. – Proven experience in acquiring and/or writing competitive project proposals, for example, project or career funding. – Proven experience in supervising predoctoral and/or master students (for example, as daily supervisor.	

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Job requirements (have to be fulfilled):	**Specific techniques (analytical, software, calculations, prototyping, etc.)**	– Excellent knowledge of the synthesis of photocatalysts and photoelectrocatalysts (solid phase). – Demonstrated experience with fabrication and testing of photoelectrochemical cells (PEC) for CO_2 conversion, water splitting, among others. – Demonstrated experience in photoelectrochemical techniques, such as photocurrent and photovoltage measurements, transient absorption spectroscopy, impedance spectroscopy, among others. – Experience with diffraction, microscopic, and spectroscopic techniques for structural and microstructural characterization such as X-ray diffraction (XRD), scanning electron microscopy (SEM), transmission electron microscopy (TEM), atomic force microscopy (AFM), energy-dispersive analysis (EDS), X-Ray photoelectron spectrometry (XPS), among others.
	Participation and/or collaboration in R&D&I/business projects	Proven participation in at least 3 R&D projects
	Languages	Excellent oral and written skills in English.
	Cross-cutting competences	– Ability to lead a team towards the achievement of the objectives as well as in the acquisition of financing – Commitment to open science in terms of research methods, data, and publications – Proven experience with industrial collaborations and/or previous experience working on industry – Experience in 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 academic publications as first author and co-author as the candidate is expected to publish in top journals in the field. At least 10 publications in Scopus-indexed journals.

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

- Demonstrated experience with *operando* and *in-situ* spectroscopic techniques to study photo(electro)catalytic reactions, e.g., XAS, XRD, near ambient-pressure XPS, Raman, FT-IR, etc.
- Experience in the analysis and quantification of gases and liquids outputs for photo(electro)catalytic reactions, e.g., GC, LC, mass spectrometry, NMR, etc.
- Experience in materials and reactions related to electrocatalysis and/or thermal catalysis.
- Experience with techniques related to electrocatalysis, such as rotating disk electrode (RDE) measurements, potentiostatic/galvanostatic polarization methods, electrochemical impedance spectroscopy (EIS), among others.
- Experience in multidisciplinary collaborations of experimental work and computational modeling (e.g., atomistic simulations and CFD) to characterize, design, and optimize photoelectrocatalytic materials and systems.
- Ability to test performance, degradation, mass transportation, and electrical resistance in new photochemical and photoelectrochemical cell setups.
- Experience in membrane processing.
- Experience in scaling up from lab to prototypes.
- More than 2 years of postdoctoral experience.

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– Being the principal investigator of at least 1 project. – Publications as last author or corresponding author. – Knowledge of Spanish and or Portuguese. – 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. IS-FOTOCATÁLISIS (HIDRÓGENO Y POWER-TO-X)**

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