JOB OFFER

JUNIOR RESEARCHER

Position: Junior Researcher in electrochemical CO_2 reduction
Offer date: CIIAE web
Project: CIIAE – Ref. IJ-REDUCCIÓN CO2 (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:	The electrochemical conversion of CO_2 to fuels and chemicals via renewable electricity is an attractive and sustainable alternative to the mass utilization of fossil resources. The successful candidate is expected to perform the following tasks: – Develop research activities in the field of electrochemical CO_2 reduction and in the synthesis of synthetic fuels, prioritizing laboratory work – Guidance of PhD and master's students – Participate in the development of research projects within the group – Participate in group meetings and write research progress reports – Work in the analysis and data processing of results obtained in the development of the laboratory work – Actively participate in the writing of original scientific articles and/or review articles/protocols or methods for publication in high impact journals. Challenges: Increasing the efficiency, reducing the cost, improving the lifetime and reducing the environmental impacts of green and synthetic fuels through the electrochemical 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: 35 000 € - 38 000 €
Academic background required:	PhD in material sciences, electrochemistry, chemistry, chemical engineering, or similar. Those candidates who are about to finish their doctorate with an agreed thesis defence date may also be eligible.	

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Job requirements (have to be fulfilled):	**Specific techniques (analytical, software, calculations, prototyping, etc.)**	– Excellent publication record as first author – Excellent analytical and laboratory skills – Solid knowledge of synthesis and characterization of electrocatalysts (solid phase catalysts) – Experience with diffraction, microscopy and spectroscopic characterization techniques for structural and microstructural characterization, such as X-ray diffraction (XRD), scanning electron microscopy (SEM), transmission electron microscopy (TEM), atomic force microscopy (AFM), X-ray energy dispersive microanalysis (EDS), X-ray photoelectron spectroscopy (XPS), Raman and FT-IR spectroscopy – Experience with *operando* and *in-situ* spectroscopic techniques (XAS, XRD, Raman, FT-IR, UV-Vis, etc.) – Knowledge of energy technologies, including renewables, storage, hydrogen and energy conversion into synthetic fuels.
	Participation and/or collaboration in R&D&I/business projects	Participation on at least 1 R&D projects
	Languages	Excellent oral and written skills in English
	Cross-cutting competences	– Commitment with open science in research methods, data and publications – Experience with industrial collaborations and/or previous experience working in industry – Pre and/or postdoctoral research stays in prestigious institutions in Spain or abroad
	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 3 publications in Scopus indexed journals. Alternatively, a monograph thesis may also be considered, as well as conference publications.

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

– Expertise in materials for photocatalytic conversion and/or thermal hydrogenation of CO_2.
– Experience in analysis and quantification of gas and liquid products by using GC, LC, MS, UV-Vis and NMR.
– Demonstrated experience with spectroscopic techniques in *operando* and *in-situ* (e.g., XAS, XRD, near ambient pressure XPS, Raman, FT-IR).

- Ability to test new electrocatalysts in cell configurations to estimate performance, degradation, mass transport and electrical resistance.
- Experience in experimental work and simulations, such as atomistic and CFD simulations.
- Experience in membrane processing and electrochemistry is highly desired.
- Experience scaling up from lab to prototypes.
- More than 2 years of postdoctoral experience.
- Knowledge of Spanish and/or Portuguese language.
- 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-REDUCCIÓN CO2 (HIDRÓGENO Y POWER-TO-X)**

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