JOB OFFER

PhD RESEARCHER

Position: PhD researcher in Solid Oxide Fuel Cells and Electrolysers.
Offer date: CIIAE web
Project: CIIAE – Ref. PD-ÓXIDO (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:	In line with CIIAE´s research on sustainable hydrogen technologies with a low carbon footprint, the so-called solid oxide cells (SOCs) have an enormous potential for decarbonizing a wide range of sectors when operated as a fuel cell (Solid Oxide Fuel Cell: SOFC), electrolysis or co-electrolysis cell (Solid Oxide Electrolysis Cell: SOEC), or even in a reversible cell (reversible Solid Oxide Cell: rSOC). All these electrochemical energy converters typically operate with a solid oxide electrolyte at high temperatures and can achieve efficiencies as high as 85% at system level. The aim of this PhD position is to investigate on SOECs based on proton-conducting ceramics. The selected candidate is expected to perform the following tasks: – Research activities within the relevant discipline; including synthesis, processing, characterization and testing of different electrodes, electrolytes, cells and stacks; with a special focus on proton-conducting ceramics for steam electrolysis. – Innovation: i.e. participation on the formulation of new research objectives. – Communication and dissemination activities: i.e. write reports and scientific papers, present findings in high-ranked journals and national/international conferences. – Third-party funds acquisition: i.e. contribute to the preparation of research proposals and submit project applications. – Networking: i.e. collaboration with other research teams (internal and external).	
Duration of the contract and salary:	Temporary Contract Initial duration: September 2025, with the possibility of extension	Gross Salary + S.S. Fees Set by law
Academic background required:	A Master in material sciences, electrochemistry, chemistry, chemical engineering, or similar.	
Other education:	A bachelor's degree in material sciences, electrochemistry, chemistry, chemical engineering, or similar.	

JOB OFFER

Job requirements (have to be fulfilled):	**Specific techniques (analytical, software, calculations, prototyping, etc.)**	- Some lab-work experience. - Some knowledge of diffraction, microscopic and spectroscopic characterization techniques for structural and microstructural characterization such as X-ray diffraction (XRD), scanning electron microscopy (SEM), transmission electron microscopy (TEM), X-Ray photoelectron spectrometry (XPS). - Some knowledge of thermal analysis methods such as thermogravimetry analysis (TGA), differential thermal analysis (DTA), differential scanning calorimetry (DSC), dilatometry and thermomechanical expansion.
	Languages	Excellent oral and written skills in English.
	Cross-cutting competences	- Commitment to open science in terms of research methods, data, and publications. - Ability to work in multidisciplinary and multicultural teams, flexible, organized and with good communication skills.
	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.	A successfully completed master thesis on a relevant topic (completed or as-advanced-as-possible thesis to be included in the job application. The final, successful thesis will be required for starting with the position)

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

- Knowledge of the fundamentals and applications of electrochemical methods.
- Experience with the synthesis and preparation of complex metal oxides, ceramics, and/or glasses.
- Knowledge of conductivity measurements by 4-DC probe and/or EIS.
- Knowledge of Spanish and or Portuguese.
- Knowledge of or collaboration with modelling and simulation, e.g., atomistic simulations and/or CFD.
- Experience is scaling up from lab to prototypes.
- Experience with industrial collaborations and/or previous experience working on industry
- Grades in master's and bachelor's degrees (documents to be included in the job application)
- Motivation letter (maximum 1 page) 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.

JOB OFFER

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 both the terms and conditions of the call for the proposal and the job offer, with the deadline being 15 calendar days from the day following the publication in the CIIAE web indicating the following reference: **Ref. PD-ÓXIDO (HIDRÓGENO Y POWER-TO-X).**

FUNDECYT-PCTEX (Edificio Parque Científico Tecnológico), Avda. de la Investigación, s/n, Edificio PCTEX, Campus de la Universidad de Extremadura – 06006 Badajoz (España)

Email: ciiae.personal@fundecyt-pctex.es Phone number: +34 924 014 594

www.fundecyt-pctex.es

www.ciiae.org