

**JOB OFFER**

# PREDOCTORAL RESEARCHER

**Position: Predoctoral Researcher in Photoelectrocatalysis**  
**Offer date: DOE publication**  
**Project: CIAE – REF. PD- FOTOCATALISIS (HIDRÓGENO Y POWER-TO-X)**  
**Department: Hydrogen and Power-to-X**  
**Estimated starting date: 1<sup>st</sup> Quarter 2024**

<b>Workplace:</b>	University of Extremadura. Cáceres campus	
<b>Tasks to be developed:</b>	<p>The photochemical and photoelectrochemical conversion of water and CO<sub>2</sub> into fuels and chemicals using solar energy is an attractive and sustainable alternative to the massive use of fossil resources.</p> <p>The selected candidate is expected to perform the following tasks:</p> <ul style="list-style-type: none"> <li>– Develop research activities in the field of photoelectrochemistry for the generation of H<sub>2</sub>/O<sub>2</sub> and/or derivatives of the photoelectroreduction of CO<sub>2</sub>.</li> <li>– Synthesize and characterize photoelectrocatalytic materials on a laboratory scale.</li> <li>– Work on the treatment and analysis of results and data obtained from laboratory.</li> <li>– Guide BSc and MSc students.</li> <li>– Collaborate with other research groups inside and outside the CIAE.</li> <li>– Participate in the development of research projects within the group.</li> <li>– Participate in group meetings and write reports on the progress of your research.</li> <li>– Actively participate in writing original and/or review scientific articles/protocols or methods that can be published in high-impact journals. You must publish 1 article per year.</li> </ul>	
<b>Duration of the contract and salary:</b>	Temporary contract with initial duration until September 2025, with the possibility of an extension.	Gross Salary + S.S. Fees Set by law
<b>Academic background required:</b>	Bachelor and Master's degree (BSc+MSc) in materials science, electrochemistry, chemistry, physics, engineering, or related disciplines.	
<b>Additional education requirements:</b>	<p>We would consider the applications from candidates currently studying for a Master's degree on a relevant topic. In such situations, the current draft of their Master's Final Project must be included along with the application. You must provide the TFM title.</p> <p><b>NOTE:</b> A successful Master's Final Project defence will be required to start with the position.</p>	
<b>Job requirements (have to be fulfilled):</b>	<p><b>Specific techniques (analytical, software, calculations, prototyping, etc.)</b></p>	<ul style="list-style-type: none"> <li>– First learning or previous experience in the synthesis of catalytic materials</li> <li>– Previous work or learning experience in electrochemical techniques.</li> <li>– Theoretical knowledge or previous experience in relevant photoelectrochemical characterization techniques, such as current and voltage measurements, and spectroscopy (transient absorption spectroscopy, impedance spectroscopy), among others.</li> <li>– Experience in experimental laboratory work, for example, designing an experimental protocol.</li> <li>– Knowledge of energy technologies, including renewables, storage, hydrogen and power-to-X.</li> </ul>

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	<b>Languages</b>	Excellent oral and written skills in English (B2)
	<b>Cross-cutting competences</b>	<ul style="list-style-type: none"> <li>- Commitment to open science in terms of research methods, data and publications.</li> <li>- Ability to work in a diverse and flexible academic environment as a team, but also independently.</li> <li>- Ability to work in a diverse and flexible academic environment in a team-oriented manner, but with a high degree of independence</li> <li>- Commitment to open science in terms of research methods, data and publications.</li> </ul>
	<b>Willingness to travel and stay abroad</b>	The candidate is expected to travel, both nationally and internationally, in the context of projects and conferences
	<b>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.</b>	<p>Successfully completed master's thesis or thesis in advanced progress on a topic relevant to this offer will be evaluated (the thesis completed or in advanced stage must be included in the job application).</p> <p>NOTE: The completed final thesis (full master's degree) will be required to start the position.</p>
<p><b>To be evaluated (adds points to the final evaluation):</b></p> <ul style="list-style-type: none"> <li>- Previous experience with various diffraction, microscopy and spectroscopy techniques for structural and microstructural characterization, such as X-ray diffraction, SEM, TEM, EDS, AFM, Raman, UV-Vis, FT-IR, NMR, among others.</li> <li>- Experience in diffraction, microscopy and spectroscopy techniques for structural and microstructural characterization, such as X-ray diffraction (XRD), scanning electron microscopy (SEM), transmission electron microscopy (TEM), atomic force microscopy (AFM), microanalysis by X-ray energy dispersion (EDS), X-ray photoelectron spectrometry (XPS), Raman Spectroscopy and FT-IR, among others.</li> <li>- Experience with surface techniques (e.g. FTIR, RAMAN, etc.).</li> <li>- Knowledge of energy technologies, including renewables, storage, hydrogen and the conversion of energy into fuels.</li> <li>- Academic publications as first author or co-author in journals indexed in Scopus will be highly valued.</li> <li>- Knowledge of Spanish and/or Portuguese.</li> <li>- Motivation letter (maximum 1 page) included in the application.</li> <li>- Evaluation provided by 2 references through telephone conversation. Contact details for references (email and telephone) are provided by candidates in their application.</li> </ul>		
<p><b>Selection process details:</b></p> <p><b>Technical test:</b> NO</p> <p><b>Language (English):</b> yes (<b>will be evaluated during the interview</b>)</p> <p><b>Job interview:</b> yes</p>		

### Interested candidates:

Send all the necessary documentation included in THE RULES OF THE CALL and THE JOB OFFER, as well as THE APPLICATION FOR ADMISSION. Deadline 15 calendar days from the day after the publication on the WEB, indicating **REF. PD- FOTOCATALISIS (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)

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