

# PHD RESEARCHER

**Position: PhD researcher in hydrogen storage**  
**Offer date: CIIAE web**  
**Project: CIIAE – Ref. PD-HIDRÓGENO (HIDRÓGENO Y POWER-TO-X)**  
**Department: Hydrogen and Power-to-X**  
**Estimated starting date: 2023**

<b>Workplace:</b>	University of Extremadura. Cáceres campus	
<b>Tasks to be developed:</b>	<p>Green hydrogen is a key energy carrier for a sustainable society. Large quantities of green hydrogen are expected to decarbonise sectors that are difficult to abate, such as long-distance transport and industry. To make optimal use of hydrogen in these applications, but also to balance electricity generation and demand on a seasonal basis, more efficient and secure methods for hydrogen storage are needed.</p> <p>The successful candidate will be expected to perform the following tasks:</p> <ul style="list-style-type: none"> <li>– To develop materials (porous, metallic alloys, ...) for solid hydrogen storage that compete in storage density with traditional methods (compressed and liquefied) but using less severe and safer operating conditions.</li> <li>– Characterise the materials obtained by measuring the physico-chemical properties using different laboratory analytical techniques.</li> <li>– Provide recommendations to be followed in the experimental line according to the obtained scientific results.</li> <li>– Write 1 article p.a. as first author in high impact journals.</li> <li>– Become gradually more independent, in order to conduct, manage and lead an independent project.</li> </ul>	
<b>Duration of the contract and salary:</b>	Temporary Contract Initial duration: September 2025, with the possibility of extension	Gross Salary + S.S. Fees Set by law
<b>Academic background required:</b>	Master's degree in engineering (with several possible disciplines, e.g., chemistry, energy, industrial), physics, chemistry, or related discipline	
<b>Other education:</b>	Excellent academic record	
<b>Professional experience:</b>		
<b>Job requirements (have to be fulfilled):</b>	<b>Specific techniques (analytical, software, calculations, prototyping, etc.)</b>	<ul style="list-style-type: none"> <li>- Excellent knowledge of physics and chemistry applied to the synthesis and characterisation of materials.</li> <li>- Good command of office tools and software for performing calculations</li> <li>- Statistical skills, e.g., statistical testing and regression</li> </ul>
	<b>Participation and/or collaboration in R&amp;D&amp;I/business projects</b>	
	<b>Languages</b>	Excellent oral and written skills in English

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	<p><b>Cross-cutting competences</b></p>	<ul style="list-style-type: none"> <li>- Commitment to open science in terms of research methods, data and publications.</li> <li>- Ability to work as a team player in a diverse and flexible academic environment in a supportive but independent manner</li> <li>- Curiosity and commitment to lifelong learning</li> </ul>
	<p><b>Willingness to travel and stay abroad</b></p>	<p>The candidate is expected to travel, both nationally and internationally, in the context of projects, conferences, and pre-doctoral stays.</p>
	<p><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>	<p>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)</p>
<p><b>To be evaluated (adds points to the final evaluation):</b></p> <ul style="list-style-type: none"> <li>- Previous experience of laboratory work and knowledge of analytical techniques.</li> <li>- Knowledge of or experience in the synthesis of nanomaterials or porous materials.</li> <li>- Some programming experience, e.g., Python and MATLAB.</li> <li>- Knowledge of Multiphysics (e.g., COMSOL) or process (e.g., ASPEN, HYSYS...) simulation tools.</li> <li>- Experience or knowledge of chemical instrumental analysis by techniques such as elemental analysis (EDX, X-ray fluorescence, HCNS...) and/or spectroscopy (FT-IR, RAMAN, UV-VIS, ICP-AES/OES, NMR...).</li> <li>- Knowledge of Spanish and/or Portuguese.</li> <li>- Grades in Master's and bachelor's degrees (documents to be included in the job application).</li> <li>- Experience with industrial collaborations and/or previous experience working on industry.</li> <li>- Motivation letter (maximum 1 page) included in the application form.</li> <li>- Evaluation provided by 2 references through telephone conversation. The contact details of the references (email and telephone) are provided by the 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:

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-HIDRÓGENO (HIDRÓGENO Y POWER-TO-X)**

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