

## JOB OFFER

# SENIOR RESEARCHER

**Position: Senior researcher in hydrogen storage**  
**Offer date: DOE publication**  
**Project: CIIAE - Ref<sup>a</sup> IS-HIDRÓGENO (HIDRÓGENO Y POWER-TO-X)**  
**Department: Hydrogen and Power-to-X**  
**Estimated starting date: January 2023**

<b>Workplace:</b>	University of Extremadura. Cáceres campus	
<b>Tasks to be developed:</b>	<p>Green hydrogen is a key energy vector for a sustainable society. Large amounts of green hydrogen are expected to decarbonise hard-to-abate sectors such as long-distance transport and industry. To optimally use hydrogen in these applications, but also to balance electricity generation and demand on a seasonal basis, hydrogen storage is needed.</p> <p>The selected candidate is expected to perform the following tasks:</p> <ul style="list-style-type: none"> <li>– Developing an attractive research agenda in the field of thermal CO<sub>2</sub> reduction</li> <li>– Acquisition of competitive funding, both private and/or public, e.g., PhD students and postdocs.</li> <li>– Successful Collaboration with universities, research institutes and companies at national and international level.</li> <li>– Successful guidance of PhD, postdocs and master students, i.e. they meet their own requirements</li> <li>– Writing papers as first authors (e.g., 1 paper p.a.) in a high-ranked journal</li> <li>– Project management and project administration (internal and external), also towards the department and CIIAE</li> </ul> <p>Challenges: Increasing the efficiency, reducing the cost, improving the lifetime and reducing the environmental impacts of hydrogen storage</p>	
<b>Duration of the contract and salary:</b>	Temporary Contract Initial duration: November 2024, with the possibility of extension	Gross Salary + S.S. Fees Gross Salary Range: 41 000 € - 45 000 €
<b>Academic background required:</b>	A PhD in material sciences, electrochemistry, chemistry, chemical engineering, or similar	
<b>Other education:</b>		
<b>Professional experience:</b>	<ul style="list-style-type: none"> <li>– At least 2 years of post-doctoral experience</li> <li>– Proven experience in acquiring and/or writing competitive project proposal, for example, project or career funding</li> <li>– Proven experience in supervising PhD and/or master students (for example, as daily supervisor)</li> </ul>	

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<b>Job requirements (have to be fulfilled):</b>	<b>Specific techniques (analytical, software, calculations, prototyping, etc.)</b>	<ul style="list-style-type: none"> <li>– Proven experience in synthesis and characterisation of chemical systems for solid or liquid hydrogen storage (metallic/complex hydrides, chemical hydrides, liquid organic carriers...), and/or porous materials for physical adsorption (e.g., carbon-based materials, polymers of intrinsic microporosity, MOFs, COFs...).</li> <li>– Demonstrated experience with analytical techniques to measure the amount of stored hydrogen like volumetric/gravimetric Pressure-Composition-Temperature (PCT) analyses.</li> <li>– Experience in the measure or calculation of thermal properties like heat of adsorption/desorption and thermal conductivity/capacity of sorbent materials in hydrogen.</li> <li>– Experience with analytical techniques to obtain textural/porous properties, mainly N<sub>2</sub> and Ar physisorption, as well as solid surface area (SSA) analysis</li> <li>– Experience with some thermal analysis methods such as thermogravimetry analysis (TGA), differential thermal analysis (DTA), calorimetry, or temperature-programmed desorption (TPD).</li> </ul>
	<b>Participation and/or collaboration in R&amp;D&amp;I/business projects</b>	Proven participation on at least 3 R&D projects
	<b>Languages</b>	Excellent oral and written skills in English
	<b>Cross-cutting competences</b>	<ul style="list-style-type: none"> <li>– Ability to lead a team towards financing and objectives</li> <li>– Commitment to open science in terms of research methods, data and publications</li> <li>– Proven experience with industrial collaborations and/or previous experience working on industry</li> <li>– Experience on collaborating with other colleagues from the same department and beyond</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>	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.
<b>To be evaluated (adds points to the final evaluation):</b>		
<ul style="list-style-type: none"> <li>– Experience or knowledge about structural characterisation techniques such as X-ray diffraction (XRD), scanning electron microscopy (SEM), and transmission electron microscopy (TEM).</li> <li>– Experience or training related to hydrogen safety and handling.</li> <li>– Experience or knowledge about 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>– Experience with operation, setup, calibration, and maintenance of volumetric/gravimetric sorption analysers.</li> <li>– Experience in collaborations of experimental work and simulations, e.g., atomistic simulations and CFD</li> <li>– Experience is scaling up from lab to prototypes</li> <li>– More than 2 years of post-doc experience</li> </ul>		

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- Being the principal investigator of at least 1 project
- Publications as last 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 the curriculum vitae, with the deadline being 15 calendar days from the day following the publication in the DOE (Official Journal of Extremadura) indicating the following reference: **Ref<sup>a</sup> IS-HIDRÓGENO (HIDRÓGENO Y POWER-TO-X)**

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