

## JOB OFFER

# JUNIOR RESEARCHER

**Position: Junior researcher in CO<sub>2</sub> capture and use**  
**Offer date: DOE publication**  
**Project: CIIAE - Ref<sup>a</sup> IJ-CO2 (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>The emission of CO<sub>2</sub> and other global warming gases causes anthropogenic climate change. However, CO<sub>2</sub> is also a versatile industrial gas, with important applications. In the context of the energy transition, the production of synthetic fuels is an important circular economy concept, with CO<sub>2</sub> capture being an enabler.</p> <p>The selected candidate is expected to perform the following tasks:</p> <ul style="list-style-type: none"> <li>– Developing competitive research projects in the field of carbon capture, utilisation and storage.</li> <li>– Collaborations with experimental and theoretical researchers from CIIAE and beyond</li> <li>– Successful collaboration with universities, research institutes and companies at national and international level.</li> <li>– Writing publications as first author and co-author (e.g., 1.5 paper p.a. in high-ranked journals)</li> <li>– Writing research proposals and contributing towards acquisition of competitive funding, both private and/or public</li> <li>– Project management and project administration (internal and external), also towards the department and CIIAE</li> <li>– Becoming gradually more independent, in order to conduct, manage and lead an independent project</li> </ul> <p>Challenges: Increasing the efficiency, reducing the cost, improving the lifetime and reducing the environmental impacts of CO<sub>2</sub> capture.</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: 35 000 € - 38 000 €
<b>Academic background required:</b>	A PhD in chemical engineering, industrial engineering, energy engineering, chemistry or related discipline	
<b>Other education:</b>		
<b>Professional experience:</b>		

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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>– Excellent lab and analytical skills including synthesis and characterization of materials for CO<sub>2</sub> capture (e.g., aminated adsorbents, zeolites, MOFs, calcium oxides...)</li> <li>– Demonstrated experience with some analytical techniques related to CO<sub>2</sub> capture: thermogravimetry analysis (TGA), volumetric analysis, fixed or fluidized beds.</li> <li>– Experience with analytical techniques to obtain textural properties, mainly N<sub>2</sub> and Ar physisorption.</li> </ul>
	<b>Participation and/or collaboration in R&amp;D&amp;I/business projects</b>	Proven participation on at least 1 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>– Commitment to open science in terms of research methods, data and publications</li> <li>– Ability to work in a diverse and flexible academic environment in a team-oriented, but independent way</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 publications as first author and co-author as the candidate is expected to publish in top journals in the field. Alternatively, a monograph thesis may also be considered, as well as conference publications
<b>To be evaluated (adds points to the final evaluation):</b>		
<ul style="list-style-type: none"> <li>– Experience with some 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).</li> <li>– Experience with different analytical techniques (IR, RMN).</li> <li>– Experience with differential thermal analysis (DTA) and calorimetry.</li> <li>– Knowledge of molecular simulation software for adsorption and some programming skills.</li> <li>– Experience is scaling up from lab to prototypes.</li> <li>– Knowledge of Spanish and/or Portuguese.</li> <li>– Proven experience in supervising PhD and/or master students (daily supervisor)</li> <li>– Grades in Master's degree (to be include in the application)</li> <li>– Experience with industrial collaborations and/or previous experience working on industry</li> <li>– Motivation letter (maximum 2 pages) included in the application.</li> <li>– 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.</li> </ul>		
<b>Selection process details:</b>		
<b>Technical test:</b> NO		

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**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 DOE (Official Journal of Extremadura) indicating the following reference: **Refª IJ-CO2 (HIDRÓGENO Y POWER-TO-X)**

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