

JOB OFFER

PhD RESEARCHER

Position: PhD researcher in thermal CO2 reduction (2 positions)
Offer date: CIIAE web
Project: CIIAE – Ref. PD-REDUCCIÓN TÉRMICA CO2 (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:	<p>Captured CO2 will be a key feedstock to produce certain fuels and chemicals which will allow the chemical sector to reduce greenhouse gas emissions and its dependency on fossils. The PhD candidate will focus on the development of novel catalytic systems for the valorisation and conversion of CO2 into fuels and/or chemicals.</p> <p>The selected candidate is expected to perform the following tasks:</p> <ul style="list-style-type: none"> - To review the state-of-the-art on this area and to provide insights for the development of novel catalytic formulations, aiming to improve the catalytic performance of reported systems, <i>e.g.</i> improve the CO2 conversion and/or selectivity to target product or utilising milder reaction conditions (<i>e.g.</i> decreasing the temperature or pressure). - Synthesis/preparation, characterisation and catalytic activity tests of catalysts. - To establish structure-activity relationships to understand key physicochemical properties influencing the catalytic performance. - Design and build up of catalytic rigs. - Dissemination of results by means of publishing scientific publication in high impact factor journals and attending to national and international conferences. - To enrol in a PhD candidate program and comply with necessary requirements to successfully develop the doctoral thesis. 	
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 degree in chemical engineering, industrial engineering, energy engineering or similar.	
Other education:		
Professional experience:		

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Job requirements (have to be fulfilled):	Specific techniques (analytical, software, calculations, prototyping, etc.)	<ul style="list-style-type: none"> – Previous working or learning experience with synthesis, characterisation and testing of heterogeneous catalysts. – Previous working or learning experience in materials and reactions related to thermal CO₂ hydrogenation, photochemistry or electrochemistry. – Some lab skills – Knowledge of energy technologies including renewables, storage, hydrogen and power-to-X
	Participation and/or collaboration in R&D&I/business projects	
	Languages	Excellent oral and written skills in English
	Cross-cutting competences	<ul style="list-style-type: none"> – Commitment to open science in terms of research methods, data and publications – Ability to work in a diverse and flexible academic environment in a team-oriented, but independent way
	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 modelling and simulation.
- Some experimental experience in the use of characterisation methods (e.g. temperature programmed methods, physisorption, chemisorption, spectroscopy and X-ray diffraction) and reaction gas analysis methods (e.g. mass spectrometry, chromatography, FTIR).
- Some experience with operation and in-situ spectroscopic techniques (e.g. XAS, XRD, Infra-red).
- Knowledge of Spanish and or Portuguese.
- Experience in 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.

Selection process details:

Technical test: NO

Language (English): yes (will be evaluated during the interview)

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Job interview: yes

Interested candidates:

Please, send all the documents requested by the terms and conditions of the call for the proposal, with the deadline being 15 calendar days from the day following the publication in the CIIAE web indicating the following reference: **Ref. PD-REDUCCIÓN TÉRMICA CO₂ (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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