

JOB OFFER

Junior Researcher

Position:		Junior Researcher associated with the projects: i) National Knowledge Generation PID2023-1523120A-I00 (InterGAMP project)	
Projects:		INTERGAMP	
Professional category:		Junior Doctor	Contribution group:
Work Center:		University of Extremadura. Cáceres Campus	
Number of places:		1	Reservation percentage, if applicable:
Department:		HYDROGEN AND POWER-TO-X	
Offer date:		DOE Publication	Deadline for submitting offers: 15 calendar days , starting from the day following publication in the DOE (Official Gazette of Extremadura)
Application for participation:	Annex I of the call for proposals.		APPLICANTS MUST SEND ALL DOCUMENTATION FROM POINT 5 OF THE RULES, indicating <u>Ref. IJ-INTERGAMP (HYDROGEN AND POWER-TO-X)</u> In addition to the mandatory documentation above, the following will be assessed: -Motivation letter (maximum 2 pages)
Documents to accompany the application:	The documents related to the point 5 of the Bases of the call		
Contact information for submitting applications		FUNDECYT-PCTEX (Science and Technology Park Building), Avda. de la Investigación, s/n, PCTEX Building, University of Extremadura Campus – 06006 Badajoz (Spain) Email: ciae.personal@fundecyt-pctex.es Telephone : +34 927 690 042 Ext. 107 www.fundecyt-pctex.es www.ciae.org	
Estimated start date:		First quarter 2026	Probation: 2 MONTHS
Waiting list		Yes, according to the regulations of points 9 and 10 of the Bases of the call	
Conditions and requirements for applicants:		Those established in point 4 of the Call Bases	
Members of the selection body:		Presidency: David Parra Mendoza	
		Secretary and member: Lucía Córdón Masero	
		Member: Catarina Rodrigues Matos	
		Member: Blanca Arias Serrano	

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Tasks to be developed:		InterGAmP project focuses on developing distributed and decarbonized electrocatalytic ammonia synthesis, compared to centralized, carbon-intensive Haber-Bosch (HB) synthesis, using an interdisciplinary methodology. Two different technologies will be developed: low- and high-temperature electrocatalytic ammonia synthesis (eNH3) at laboratory scale. Importantly, the bench-scale results will inform energy system modeling for ammonia production by providing relevant input data such as materials, reaction conditions, faradaic and energy efficiencies, throughput rate, and balance of plant, which will then be used to determine life-cycle cost (LCC) and life-cycle emissions (LCE). Specifically, energy system models will be developed for two electrocatalytic routes, namely low- and high-temperature, as well as for the Haber-Bosch plants, to understand the different ammonia pathways based on technology, geography, and regulations. Additionally, we will perform a sensitivity analysis to determine break-even points for electrocatalytic ammonia synthesis to inform bench-scale performance targets—i.e., a feedback loop. The InterGAmP project will contribute in a timely manner to a strategic action of the State Plan for Scientific, Technical and Innovation Research 2021-2023, specifically "Climate, Energy and Mobility," by developing sound techno-economic and regulatory technologies for the electrocatalytic synthesis of ammonia. The successful candidate is expected to perform the following tasks in collaboration with experimental and theoretical scientists, with the latter performing simulations: – Creation of LCA and techno-economic models on technologies for the decarbonization of ammonia production – Providing recommendations to decision makers based on modeling results – Collaborations with experimental researchers from CIIAE and beyond – Successful collaboration with universities, research institutes and companies at national and international level – Writing the publication as first author and co-author – Management and administration of the INTERGAMP project – Becoming gradually more independent, in order to conduct, manage and lead an independent project Challenges: There are a large number of available technologies and actors (e.g., households and industry), as well as intrinsic uncertainty that makes energy system models complex. A large amount of data is also generated, making it challenging to evaluate important results to provide policy recommendations.	
Academic training:		PhD in engineering, mathematics, physics, computer science, economics, or related numerical disciplines. If you are still completing your thesis, the document must be submitted in order to sign the contract.	
Other formation:		n/a	
Contract duration:		12 months or end of financing (whichever comes first)	
Remuneration :	Gross Annual Salary: 37.218,30 €	Financing:	State Research Agency/ MCIU
Details of the selection process:			
- Technical test: NO			

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- Language : YES (will be assessed during the interview) - Job interview : YES	
Evaluation: evaluable criteria and subcriteria	MERIT AND CURRICULAR EVALUATION PHASE (COMPETITION): up to 60 points • Specific techniques (analytical, software, calculations, prototyping, etc.) - Excellent analytical skills and experience in theoretical and applied modeling - Life Cycle Analysis and Techno-Economic Analysis (experience and skills using Ecoivent , OpenLCA , Brithway , PREMISE, etc.) - Experience in modeling and optimization of energy systems - Programming experience (any language, but work can be primarily in Python and Matlab). - Knowledge in ASPEN type chemical process modeling - Knowledge of energy technologies, including renewable energy, hydrogen, flexibility technologies and Power - to -X - Knowledge of thermodynamics • Participation and/or collaboration in R&D&I/business projects - Demonstrated participation in at least 1 R&D project • Languages - Excellent oral and written skills in English • Transversal skills - Commitment to open science in terms of research methods, data and publications - Ability to work in a diverse and flexible academic environment as part of a team, but also independently - Experience in collaborating with other colleagues from the same department, center and other institutions • Willingness to travel and remain away from the workplace - The candidate may travel, both nationally and internationally, in the context of the project and conferences. • Publications: scientific articles (in journals indexed in Web of Science and/or Scopus), theses (PhD and/or Master's), conference presentations, reports, technical reports, technical guides, etc. - A solid track record of publications as first and co-author is expected, as the candidate must publish in leading journals in the field. At least three publications in Scopus-indexed journals are required. Alternatively, a monograph thesis and conference publications may also be considered.

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	• To be valued – Motivation letter (maximum 2 pages) included in the application. – Demonstrated experience with agent-based modeling ("ABM") – Knowledge of power flow analysis – Experience with "statistical learning models and machine learning" – "GIS" Modeling – Experience with industry collaborations and/or previous experience working in industry
	INTERVIEW PHASE (OPPOSITION): up to 40 points
	– Evaluation provided by two references in a 10-15 minute telephone conversation. To this end, the candidate must provide the email and phone number of two people when submitting the CV application. The selection committee will contact them to request these references. – Candidate's interest in integrating into the organization and the project. – Adequacy of knowledge, experience and other requirements to the candidate's profile. – Competencies, aptitudes, skills and abilities: managerial, organizational, analytical, human team management, communication. – Communication skills in English, Spanish and/or Portuguese.

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