

JOB OFFER

JUNIOR RESEARCHER

Position: Junior researcher on solid-liquid Phase Change Materials (PCM) for thermal energy storage

Offer date: WEB publication

Project: CIIAE -Ref^a IJ- PCM S-L (ALMACENAMIENTO DE ENERGÍA TÉRMICA)

Department: Thermal Energy Storage

Estimated starting date: First quarter of 2024

Workplace:	University of Extremadura. Cáceres campus.	
Tasks to be developed:	<p>The storage based on PCM uses phase transitions to store latent heat, usually from solid to liquid phase. In some cases, these materials need to be modified to improve the storage efficiency and stability.</p> <p>The selected candidate is expected to perform the following tasks:</p> <ul style="list-style-type: none"> - Search for natural products and/or local industrial waste as potential new PCMs. - Rational design, synthesis and characterization of PCMs showing high enthalpy solid-liquid phase transitions - Synthesis and characterization of new nanomaterials with high thermal conductivity for enhancing PCMs - Micro and/or nanoencapsulation of PCMs - Evaluation and screening of the PCMs under development: heat capacity, cyclability and additives influence on these properties. - Long-term storage optimization - Scale-up for further testing in heating/cooling storage systems. - Acquisition of competitive funding, both private and public. - Project management and administration. - Close interdisciplinary collaboration with CIAE colleagues. As well as collaboration with universities, research institutes and companies at a national and international level. - Support, supervision and tutoring of doctoral students and master's students. - Writing scientific publications and presentation of results at international conferences. <p><u>Challenges:</u> to find new & relatively high abundant PCMs, to increase power output by increasing thermal conductivity, to improve stability, cyclability and encapsulation (macro, micro and nano) for higher system performance.</p>	
Duration of the contract and salary (per annum):	Fixed-term contract. End: September 2025. Possibility of extension.	Gross Salary Range: 35 000 € - 38 000 €
Academic background required:	<p>A PhD in Physics, Chemistry, Chemical engineering, Materials Science, Solar Energy or similar</p> <p>Note: Candidates about to finish the thesis can submit the application. The PhD certificate will be required by the time of signing the contract.</p>	
Other education:	Valuable master's degree in Materials for Energy Storage and Conversion, Materials Science, Crystallography, Nanotechnology, or similar	
Professional experience:	Post-doctoral experience is not required	

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Job requirements (have to be fulfilled):	Specific techniques (analytical, software, calculations, prototyping, etc.)	<p>Experience/competence to be valued:</p> <ul style="list-style-type: none"> - Demonstrated competence in synthesis and characterization of materials. - Experience in thermal analyses: Differential scanning calorimetry (DSC) and thermogravimetric analysis (TGA), thermal conductivity. - Experience in characterization techniques: XRD, TEM, SEM, FTIR, Raman, NMR, AFM, XPS, etc. - Experience in the study of PCMs for thermal energy storage applications, phase change kinetics, charge/discharge rate, etc.
	Participation and/or collaboration in R&D&I/business projects	Demonstrated experience in participation and/or collaboration in R+D+i projects will be valued
	Languages	English. Valuable: Spanish and Portuguese.
	Cross-cutting competences	<ul style="list-style-type: none"> - Excellent leadership and communications skills. - Ability to supervise and work in teams. - Experience in collaborations inside and outside the own department
	Willingness to travel and stay abroad	This position requires occasional participation in events outside of Extremadura
	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.	The number and relevance of scientific publications / congresses related to the main topic of the position will be valued.
To be evaluated (adds points to the final evaluation)		
<ul style="list-style-type: none"> - Motivation letter: please include a letter describing the skills you consider of value for the position, as well as some general objectives of the research you would like to develop at the CIAE. - Personal references: please provide two reference letters (from employers and/or professors, together with their contact information, e-mail and telephone number) highlighting the technical and soft skills identified by the reference in your profile, and that are of relevance for the position. - Research projects: please include a list of the R+D+i projects you have been involved in. - Experience in writing proposals for competitive calls (even if funding has not been obtained, in this case, please attach the evaluation letter). - Having been a principal investigator in R+D+i projects - Having supervised end-of-degree projects (TFGs), end-of-master projects (TFMs) - Being the first author or the corresponding author in scientific articles - Having completed specific training courses, relevant to the offered position - Experience in energy storage applications - Awards, mentions or other achievements <p>Note: To facilitate the evaluation process, <u>it is recommended</u> to include a list or table, itemizing the merits you consider that should be evaluated for each of the requirements (Ex: Requirement: Experience in XRD measurements. Candidate: brief description of experience in XRD reflected in scientific articles, theses, courses, projects, etc.)</p>		
TECHNIQUES: Oral knowledge test YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
LANGUAGE: ORAL YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> It will be evaluated during the interview.		
JOB INTERVIEW: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		

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Interested candidates

Please, send all the documents requested by the terms and conditions of the call for proposals, together with all the documents requested by this job offer, and the Application Form. Deadline is 15 calendar days from the day following the publication in the CIAE web, and indicating the following reference: **Refª IJ-PCM S-L (ALMACENAMIENTO DE ENERGÍA TÉRMICA)** to:

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