

PhD Researcher

Position: PhD researcher on nanofluids for thermal energy storage
Offer date: WEB publication
Project: CIIAE – Refª PD-NANOFLUIDOS (ALMACENAMIENTO DE ENERGÍA TÉRMICA)
Department: Thermal Energy Storage
Estimated starting date: January 2023

Workplace:	University of Extremadura. Cáceres campus	
Tasks to be developed:	<p>Nanofluids are solid-liquid composites in which nanoparticles or nanofibers (1-100 nm) are suspended in a liquid. Nanofluids have the potential to improve thermophysical properties in thermal storage systems, such as thermal conductivity, thermal diffusion or heat transfer coefficient, and to modify viscosity.</p> <p>The successful candidate is expected to acquire a PhD degree by defending their research work in front of a court in a public session.</p> <p>The selected candidate is expected to perform the following tasks:</p> <ul style="list-style-type: none"> – Formulation of suspensions, synthesis and characterization of nanostructured materials. – Development of new advanced nanomaterials to increase the efficiency of different thermal energy processes. – Development of highly flexible and efficient heat transfer devices. – Adaptation of nanofluids/Nano-enhanced Phase Change Materials (NePCMs) to specific thermal processes in the industry. – Writing scientific publications and presentation of results at international conferences. 	
Duration of the contract and salary:	Fixed-term contract. End: September 2025. Possibility of extension.	Gross Salary: 19065,34 €
Academic background required:	Graduate degree in Physics, Chemistry, Chemical engineering, Mechanical engineering, Environmental Sciences or similar To meet the requirements to access into a PhD program	
Other education:	It will be valued to have completed or to be studying a master's degree in Materials for Energy Storage and Conversion, Nanoscience and Nanotechnology, Complex Materials: Thermal Analysis and Rheology	
Professional experience:	- Not required	
Job requirements	Specific techniques (analytical, software, calculations, prototyping, etc.)	– Office tools.
	Participation and/or collaboration in R&D&I/business projects	- Not required
	Languages	English. Valuable: Spanish and Portuguese.
	Cross-cutting competences	– Ability to work in a team – Communication skills
	Willingness to travel and stay abroad	This position requires occasional travelling outside of Extremadura

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	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.	Not required.
<p>To be evaluated (adds points to the final evaluation)</p> <ul style="list-style-type: none"> - Having carried out laboratory or R&D work outside of regulated studies. - Special attention will be given to the experience in some of the following topics: <ul style="list-style-type: none"> • investigation of physicochemical properties, including rheological and thermal properties of nanofluids / nano-enhanced phase change materials (NePCMs) / Deep Eutectic Solvents (DESS) • nano-dispersions, nanofluids, gels and/or colloids • Thermal conductivity • Differential scanning calorimetry (DSC) and thermogravimetric analysis (TGA). • Rheology. • Zeta potential. • Optical techniques such as DLS (dynamic light scattering) and electron microscopy - Academic record - Training courses relevant to the position. - Motivation letter: Please include a letter describing the skills you consider of value for the position - Reference letters: please provide two reference letters (for example of professors/tutors with their contact details). highlighting the technical and soft skills identified by the reference in the candidate, and that are of relevance for the position. - Having obtained competitive research contract. - Scientific publications / participation in scientific meetings - Experience in scaling from laboratory to prototypes - Experience in industrial collaborations and/or previous experience working in industry. - Patents. - Awards, mentions or other achievements. <p>Note: To facilitate the evaluation process, it is recommended to include a list or table, itemizing the merits you consider that should be evaluated for each of the requirements (Ex: Requirement: Experience in thermal conductivity measurements. Candidate: brief description of experience in the study of thermal conductivity reflected in scientific articles, theses, courses, projects, etc.)</p>		
<p>Selection process:</p> <p>TECHNIQUES: Oral knowledge test YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p> <p>LANGUAGE: ORAL YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> (It will be evaluated during the interview)</p> <p>JOB INTERVIEW: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/></p>		

Interested candidates

Please send all the documentation required in THE CONDITIONS OF THE CALL and THE JOB OFFER, no later than 15 calendar days from the day after publication on the WEB, indicating: **ref^a PD- NANOFUIDOS (ALMACENAMIENTO DE ENERGÍA TÉRMICA)** to:

FUNDECYT-PCTEX (Edificio Parque Científico Tecnológico), Avda. de la Investigación, s/n – Edificio PCTEX, Campus de la Universidad de Extremadura - 06006 Badajoz (Spain)

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