JOB OFFER

JUNIOR RESEARCHER

Position: Junior researcher on development of molten salt systems for thermal energy storage
Offer date: WEB publication
Project: CIIAE -Refª IJ- SALES FUNDIDAS (ALMACENAMIENTO DE ENERGÍA TÉRMICA)
Department: Thermal Energy Storage
Estimated starting date: 2023

Workplace:	University of Extremadura. Cáceres campus.	
Tasks to be developed:	Molten salts are ionic compounds, in solid state at room temperature and atmospheric pressure, but liquid when heated above its melting temperature. In liquid phase, these salts have high volumetric heat capacities, allowing a lot of heat to be stored while occupying the minimum amount of physical space, and being easy to transport. Sensible heat storage with molten salts is a mature and commercially proven technology. The biggest challenge of this technology is to improve the chemical compatibility between the salts and the tanks or components in contact with it to reduce corrosion problems. The selected candidate is expected to perform the following tasks: – Preparation and characterization of organic and inorganic salts, eutectic mixtures, etc. – Coordination and/or performance of corrosion experiments in molten salts under controlled environments. – Development and comparison of electrochemical methods to measure salt properties related to corrosion. Mechanistic understanding of alloy degradation in molten salts. – Development and validation of material systems and protection conditions that increase the useful life of heat transfer fluids (HTF) and of components in contact with molten salts and HTFs. – Validation of other equipment used in the storage of thermal energy: heaters, pumps, etc. – Close interdisciplinary collaboration with CIIAE 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. – Acquisition of competitive funding, both private and public.	
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:	A PhD in Materials Science, Nuclear Engineering, Chemistry, Chemical engineering, Physics or similar	
Other education:	Valuable master's degree in - Materials for Energy Storage and Conversion - Chemical engineering - Materials Science - Structural integrity and durability of materials, components and structures - thermoelectric solar energy - thermal energy systems - thermosolar	
Professional experience:	Post-doctoral experience not required	

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Job requirements (have to be fulfilled):	**Specific techniques (analytical, software, calculations, prototyping, etc.)**	– Experience in the study of molten salts using electrochemical techniques will be valued – Experience and understanding of the basic principles of high temperature corrosion will be valued. – Experience in the use of microstructural characterization techniques such as optical microscopy, scanning electron microscopy, X-ray diffraction, Raman microscopy, transmission electron microscopy, ICP-MS, will be valued.
	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	– Communication skills – Ability work in a team – 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 (PCMs, TES) will be valued.

To be evaluated (adds points to the final evaluation)

- Motivation letter: please include a letter describing the skills you consider of value for the position of Junior researcher in molten salts, as well as some general objectives of the research you would like to develop at the CIIAE.
- 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 the candidate, and that are of relevance for the position.
- Research projects: please include a list of the R+D+i projects you have been involved
- Experience in writing proposals for competitive calls (even if funding has not been obtained, in this case, please attach the evaluation letter).
- Having obtained funding or competitive research contracts, such as FPU, FPI, Torres Quevedo, Juan de la Cierva, Ramón y Cajal, Marie Sklodowska Curie, or equivalent
- Having been a principal investigator in R+D+i projects
- Demonstrated experience in supervising work teams
- Having supervised end-of-degree projects (TFGs), end-of-master projects (TFMs)
- Being the first author or the corresponding author in scientific articles
- Have completed specific training courses, relevant to the offered position
- Experience in studying heat transfer performance, and methods to improve heat transfer
- Experience in scaling from laboratory to prototypes
- Experience in modeling/simulations either directly or through collaborations
- Experience in industrial collaborations and/or previous experience working in industry.
- Patents.
- Awards, mentions or other achievements

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 analysis. Candidate: brief description of experience in thermal analysis reflected in scientific articles, theses, courses, projects, etc.)

TECHNIQUES: Oral knowledge test YES ☐ NO X

LANGUAGE: ORAL YES X NO ☐
It will be evaluated during the interview.

JOB INTERVIEW: YES X NO ☐

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: **Refª IJ- SALES FUNDIDAS (ALMACENAMIENTO DE ENERGÍA TÉRMICA)** to:

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