JOB OFFER

Technician in Electron Microscopy (SEM/TEM)

Position:	**Technician specializing in Scanning Electron Microscopy (SEM) and Transmission Electron Microscopy (TEM)**		
Reference:	**TMS-SEM/TEM (HYDROGEN AND POWER-TO-X)**		
Professional category:	**Senior Master Technician**		
Work Center:	University of Extremadura. Cáceres Campus		
Number of places:	**1**	**Reservation percentage, if applicable:**	
Department:	HYDROGEN AND POWER-TO-X		
Offer date:	Publication on the Website	**Deadline for submitting bids:**	**15 calendar days**, starting from the day following publication on the website.
Application for participation:	**Published together with the present call**	**Application submission method for candidates:**	APPLICANTS MUST SEND ALL THE DOCUMENTATION FROM POINT **5** FROM THE BASES, indicating **Refª TMS-SEM/TEM (HYDROGEN AND POWER-TO-X)**
Documents to accompany the application:	The related documents in **point 5 of the Terms and Conditions of the call for applications.** In addition to the mandatory documentation listed above, the following will be considered: - Motivation Letter (maximum 2 pages)		
Contact information for submitting applications	FUNDECYT-PCTEX (Science and Technology Park Building), Research Avenue, s/n, PCTEX Building, University of Extremadura Campus – 06006 Badajoz (Spain) Email: ciiae.personal@fundecyt-pctex.es www.fundecyt-pctex.es www.ciiae.org		
Estimated start date:	**February 2027**	**Probation:**	**2 MONTHS**
Waiting list	Yes, according to the regulations in points **9** and **10** of the Call for Proposals		
Conditions and requirements for applicants:	Those established in point **4** of the Call for Proposals		
Members of the selection committee:	**PresidenT:** Cristina Flox Donoso		
	Secretary and member: Lucía Cordón Masero		

	Secretary and member (Substitute): Cristina Cortés Gragera
	Member: Javier Díez Sierra
	Member: Liliana Analía Díaz
Tasks to be developed:	***Job context:*** The Iberian Centre for Research in Energy Storage (CIIAE) is a newly created research centre dedicated to the design, development and characterization of advanced materials for applications in the field of energy. The research lines encompass a wide variety of materials amenable to characterization using advanced focused ion beam scanning electron microscopy (FIB-SEM) and scanning transmission electron microscopy (S)TEM techniques. These include inorganic materials such as perovskites, hydrates, silicas, zeolites, metal-organic frameworks (MOFs), metallic and metal oxide nanoparticles, Prussian blue and its analogs (PBAs); carbonaceous and graphitic materials (graphite, graphene, nanotubes, and carbon fibers); two-dimensional (2D) materials, ceramics, porous materials, organic materials, hybrid materials, and nanostructured materials, as well as active materials for batteries and supercapacitors. The characterization of coatings, interfaces, multilayer materials, and samples subjected to aging and electrochemical degradation processes is also considered. The center has the following electron microscopy equipment: - FIB-SEM (Zeiss Crosseam 550) - Transmission and scanning transmission electron microscope (TEM/STEM), model Talos F200X G2, equipped with specialized sample holders (in situ holders) from DENSsolutions, models STREAM and LIGHTNING, for carrying out *in situ experiments* . The selected person will be responsible for the operation, maintenance, management of specialized accessories and sample holders, user support and scientific support of the focused ion beam scanning electron microscopy (FIB-SEM) and transmission electron microscopy and scanning transmission electron (S)TEM facilities, working closely with the center's research groups and external collaborators. The technician will have the following functions and responsibilities: **1. Equipment Operation:** -Perform morphological, structural and compositional characterization experiments of materials using SEM and TEM/STEM. -FIB-SEM: Morphological, structural and compositional characterization by SEM, EDS and EBSD; preparation of cross-sections, localized deposition, three-dimensional (3D) reconstruction by serial cuts and preparation of thin sections for TEM/STEM. -Sample preparation: Dispersion and deposition of nanoparticles on TEM grids, fabrication, extraction, transfer and thinning of lamellae by FIB, preparation of cross sections and optimization of procedures for materials sensitive to the electron or ion beam. -TEM/STEM: Microstructural, nanostructural and compositional characterization using TEM, electron diffraction, BF/ADF imaging, HAADF-STEM and elemental analysis using EDS (Super-X G2), according to the capabilities of the equipment. -In situ and in operando experiments: Operation of specialized sample holders for the study of structural transformations, evolution of interfaces, reaction

	mechanisms and material degradation processes. -Data analysis: Development and optimization of methodologies for the acquisition, processing and interpretation of images, diffraction patterns and compositional maps, including the development of protocols and scientific support to research groups. **2. Equipment management**: - Assume operational responsibility for FIB-SEM and TEM/STEM equipment and their auxiliary systems, ensuring their correct operation and preventive maintenance. -Perform routine alignment, calibration and performance verification operations on equipment. -Coordinate the interventions of the technical services, the management of consumables and spare parts, as well as the monitoring of repairs and maintenance. -Manage the operation of the laboratory, including equipment reservations, sample traceability, measurement records and standard operating procedures (SOPs). -Ensure compliance with the safety protocols associated with the operation of the equipment and its auxiliary systems. **3. User support** -Manage characterization requests and provide training to users in the handling of FIB-SEM and (S)TEM equipment, sample preparation, image acquisition and analysis and interpretation of results, including training and supervision of regular users for the autonomous use of the equipment, in accordance with established operating and safety protocols. -Advise on the selection of the most appropriate electron microscopy techniques for each type of material and scientific objective, including the definition of sample preparation strategies and experimental conditions. -Provide technical and scientific support to the center's research groups and external collaborators, facilitating the development of advanced characterization experiments. **4. Proposals, reports and results** -Support the preparation and presentation of scientific proposals for access to unique electron microscopy infrastructures, including national and international facilities, as well as advise on the design of advanced experiments and the planning of measurements. - Prepare technical characterization reports, including images, diffraction patterns, elemental maps, microstructural analyses and results of in situ and in operando experiments, ensuring the proper management and traceability of the data generated.

	-Contribute to scientific publications, research projects and funding proposals by developing characterization methodologies, interpreting results and providing specialized technical knowledge.		
Required academic qualifications:	Master's degree in Chemistry, Physics, Materials Science and Engineering, Nanoscience and Nanotechnology or related disciplines, with at least five years of demonstrable experience in advanced electron microscopy techniques; or a PhD in one of these disciplines, with experience in characterizing materials using electron microscopy. In both cases, advanced and demonstrable experience in the operation of at least one of the electron microscopy techniques (FIB-SEM or (S)TEM) will be required, complemented by practical experience in the other, including sample preparation, image acquisition and structural and compositional analysis of materials.		
Another formation:	It will be positively valued: • Additional technical training related to the area will be considered.		
Contract duration:	Permanent scientific-technical contract under Article 23 bis of Law 14/2011, subject to funding and initially scheduled to run until 31 December 2027		
Remuneration:	BS: €38.720,97	**Financing:**	According to point **1** of the Call for Proposals

Details of the selection process:

- **Technical test:** NO
- **Language:** YES **(will be assessed during the interview)**
- **Job interview:** YES

Evaluation: evaluable criteria and sub-criteria	**MERIT AND CURRICULAR ASSESSMENT PHASE (COMPETITION)** **Maximum score: 60 points** (Applicants who do not achieve 30 points will be excluded)
	– Advanced experience in SEM and/or TEM/STEM electron microscopy techniques. Proven track record through scientific publications or recognized contributions to research projects based on electron microscopy. **Up to 20 points** – Practical and demonstrable experience in the operation of SEM or TEM/STEM equipment, as a complementary technique to that in which the candidate demonstrates advanced experience. **Up to 10 points** – Experience in the management, operation, calibration, and maintenance of microscopy equipment. **Up to 10 points** – Experience in the processing, analysis, and interpretation of images, diffraction patterns, and elemental characterization results. **Up to 10 points** – Experience in advanced sample preparation, especially fabrication and transfer of thin films using FIB. **Up to 5 points** – Experience in the characterization of materials for energy storage and conversion technologies. **Up to 5 points**

	INTERVIEW PHASE (COMPETITIVE EXAMINATION) **Maximum score: 40 points** (Applicants who do not achieve 20 points will be excluded)
	– Candidate's interest in joining the organization, availability to start, and motivation to perform the duties of the advertised position. **Up to 10 points** – Suitability of the knowledge, experience, and other required qualifications to the candidate's profile. **Up to 10 points** – Competencies, aptitudes, skills and abilities: leadership, organizational, analytical, team management, and communication skills. **Up to 10 points** – Excellent interpersonal skills: communication, problem-solving and conflict resolution, organizational and team management skills, adaptability to change. **Up to 5 points** – Communication skills in English and/or Spanish. **Up to 5 points**

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The Authority: Carolina Grau Ferrando, Managing Director FUNDECYT-PCTEX

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