Research Engineer in Instrumentation System

Affectation: Laboratoire Science des Procédés Céramiques et de Traitements de Surface, UMR 7315 CNRS, LIMOGES, France
https://www.unilim.fr/spcts/Postes-a-pourvoir.html

Mission:
The mission is part of a project to acquire and use MEB-FIB equipment. It is a high resolution scanning electron microscope coupled to a focused ion beam (SEM-FIB). The engineer will be responsible for this equipment. He / she shall organize and manage the technical and scientific activities of the MEB-FIB: manage usage schedule, ensure the right functioning of the equipment, optimize and develop each of the instrumental techniques related to this equipment.

Activities:

• Ensure the right functioning of the equipment, optimize performance and manage interface with maintenance services.
• Implement the main associated microstructural techniques: SEM, FIB, EDS, EBSD.
• Develop scientific activities around SEM-FIB.
• Participate in the supervision of the practical work of electronic microscopy (SEM, EDS, TEM) for Licence and Master "Materials" training at the Faculty of Science and Technology in Limoges.

Skills:

• Advanced knowledge in engineering sciences, materials sciences and physics and chemistry of materials.
• Technical expertise in scanning electron microscopy coupled with a focused ion beam (SEM-FIB) and associated analytical techniques (EDS, EBSD).
• Ability to prepare samples for transmission electron microscopy using a SEM-FIB.
• Excellent level in each of the techniques placed under his responsibility: These techniques are preparation of thin samples adapted for observations by transmission electron microscopy, the 3D characterization of materials by tomography in imaging mode, in chemical analysis mode by EDS and in EBSD analysis mode, the design of patterns by ion etching and by in-situ deposition of metallic and insulating materials.
• Ability to work in a team and to acquire the multidisciplinary skills necessary for efficient project execution.
• Competence in oral and written English (European level B1/B2)

Context:

The work developed at the SPCTS aims to study the transformations of the material involved in the implementation of ceramic processes and surface treatment processes. The activity of the laboratory is thus at the intersection of the field of materials and the engineering of the

processes. It is a multidisciplinary approach with a major objective of understanding, characterizing, mastering and modeling the various processes that lead to the realisation of an object or a deposit presenting one or more useful properties.
The SPCTS has 195 people (65 teacher-researchers), 13 CNRS researchers, 26 ITA / BIATSS, 70 PhD students, 21 post-doctoral researchers.

Research is based on a substantial set of elaboration and characterization materials, not only for the structure of materials at different scales, but also for the study of the various relevant chemical and physical properties as well as the properties of use. The characterization equipment is grouped together in a joint service of characterization (CARMALIM) which includes 14 people.

The candidate will work within the platform of characterization CARMALIM. In close co-operation with scientists, this platform is in charge for developing the use of instrumental techniques characterization and heat treatments of ceramic materials.

Contract type: Limited-term contract 12 months

Work time: Full time

Salary: 2866.15€ per month

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