

Requirement of a Facility Technologist for Micro and Nano Characterization Facility (MNCF), CeNSE, IISc, Bengaluru 560 012

The Micro Nano Characterization facility (MNCF), Centre for Nanoscience and Engineering (CeNSE), Indian Institute of Science (IISc), Bengaluru, is inviting applications for the position of Facility technologist in the field of Surface Science & Chemical Characterization.

Essential Qualification: MSc / MTech / BTech in Physics, Chemistry, Materials Science or related Physical Sciences / Engineering disciplines.

Job Description: The selected candidate will play a critical role in the daily operation, maintenance, and data interpretation of X-ray photoelectron spectroscopy (XPS) systems. The role involves supporting researchers in chemical-state analysis, ensuring instrument uptime in an ultra-high vacuum (UHV) environment, and maintaining rigorous documentation in compliance with international quality management standards. He/she should also train/teach users of this equipment and maintain all records. Discharge any other duties assigned by the management from time to time.

Roles and Responsibilities

- Instrument Operation: Perform routine and advanced measurements, including survey scans, high-resolution core-level spectroscopy, and depth profiling.
- Data Analysis: Assist users in peak fitting, chemical state identification, and quantification using standard software (e.g., Avantage, CasaXPS).
- Maintenance & Troubleshooting: Execute periodic calibration, UHV maintenance (bake-outs, pump monitoring), and coordinate hardware repairs.
- Sample Management: Help and guide users on sample preparation techniques specifically for UHV environments to prevent system contamination.
- Quality & Compliance: Maintain logbooks, Standard Operating Procedures (SOPs), and quality records in alignment with ISO standards.
- Technical Reporting: Should be able to prepare detailed technical reports of the analysis

Experience: Prior Hands-on experience operating X-ray photoelectron spectroscopy (XPS) instruments is preferred. A solid understanding of Ultra-High Vacuum (UHV) systems and photoelectron physics is required. A basic understanding of material and device characterization is an added advantage. Basic proficiency in XPS data processing software (e.g., CasaXPS). Advanced expertise in spectral deconvolution and chemical shifting analysis. It is essential to have good communication skills. Proficiency in technical report writing and data documentation. Functional knowledge of ISO Management Standards (e.g., ISO 9001 or ISO/IEC 17025) is an added advantage.

How to Apply: Please apply online using the following link <https://forms.gle/TLKAQMhutVWCmvHd7> on or before the 24th of March 2026.

Requirement of a Facility Technologist for Micro and Nano Characterization Facility (MNCF), Centre for Nano Science and Engineering, Indian Institute of Science, Bengaluru – 560 012

The Micro Nano Characterization Facility (MNCF), Centre for Nano Science and Engineering (CeNSE), Indian Institute of Science (IISc), Bengaluru, is a shared user facility that provides advanced materials characterization capabilities to researchers from academia, research institutions, and industry.

MNCF is inviting applications for the position of Facility Technologist in the field of Structural Characterization using X-ray Diffraction (XRD).

Essential Qualification: MSc / MTech / BTech in Physics, Chemistry, Materials Science or related Physical Sciences / Engineering disciplines.

Job Description: The selected candidate will play a critical role in the daily operation, maintenance, and data interpretation of X-ray diffraction (XRD) systems. The role involves supporting researchers in structural and crystallographic analysis of materials using powder XRD, thin-film XRD, and high-resolution four-circle XRD techniques, ensuring instrument uptime, and maintaining rigorous documentation in compliance with international quality management standards.

The position is within a multi-user research facility environment, where the candidate will interact with researchers from academia and industry, assist them in planning experiments, ensure proper operation of the instruments, and maintain documentation in compliance with international quality management standards.

He/she should also train users on the proper use of the equipment, assist them during measurements, and maintain all operational records. The selected candidate will discharge any other duties assigned by the facility management from time to time.

The position offers an opportunity to work closely with leading researchers at IISc and contribute to advanced materials characterisation studies across diverse fields, including materials science, nanotechnology, electronics, and energy materials.

Roles and Responsibilities

- **Instrument Operation:** Perform routine and advanced measurements using X-ray diffraction systems, including powder X-ray diffraction for phase identification, thin-film θ - 2θ measurements, grazing incidence X-ray diffraction (GIXRD), rocking curve measurements, reciprocal space mapping (RSM), pole-figure and texture analysis, residual stress measurements, X-ray reflectivity (XRR), and high-resolution four-circle XRD measurements.
- **Data Analysis:** Assist users in crystallographic analysis, phase identification, lattice parameter determination, thin-film structural characterization, texture and orientation analysis, reciprocal space map interpretation, and Rietveld refinement of powder diffraction data.
- **Maintenance & Troubleshooting:** Execute periodic calibration, preventive maintenance, and troubleshooting of XRD systems including X-ray sources, optics, detectors, goniometers, and sample stages, and coordinate hardware repairs when required.

- **User Facility Support:** Train users and assist them during experiments. Guide users in planning diffraction measurements and ensure safe and proper operation of the instruments in a shared facility environment.
- **Quality & Compliance:** Maintain logbooks, Standard Operating Procedures (SOPs), and quality records in alignment with ISO management standards.
- **Technical Reporting:** Should be able to prepare detailed technical reports of the analysis.

Experience:

Prior hands-on experience operating X-ray diffraction (XRD) instruments is preferred. A solid understanding of crystallography, diffraction theory, and structural characterization of materials is desirable.

Experience in the following techniques will be an added advantage:

- Powder XRD analysis
- Thin-film XRD and grazing incidence XRD
- Reciprocal space mapping
- Texture and pole-figure measurements
- Rietveld refinement and diffraction data analysis

Candidates with demonstrated hands-on experience in independent operation, alignment, calibration, and troubleshooting of X-ray diffraction systems will be preferred. Applicants should clearly indicate their hands-on experience with XRD instruments including system alignment, calibration, data acquisition, and diffraction data analysis.

Experience working in a multi-user research facility, national laboratory, or shared instrumentation center will be an added advantage. Good communication skills, technical documentation ability, and user interaction skills are essential. Functional knowledge of ISO Management Standards (e.g., ISO 9001 or ISO/IEC 17025) is an added advantage.

How to Apply:

Please apply online using the following link <https://forms.gle/TLKAQMhutVWCmvHd7> on or before **24 March 2026**.

Only shortlisted candidates will be contacted.