

Thin Film Materials Lab Support Technologist (Job ID 689004)
Sandia National Laboratories
Albuquerque, NM

Apply at: <http://www.sandia.gov/careers/index.html>

What Your Job Will Be Like

Our team is seeking a dedicated R&D laboratory support technologist to support teams studying high-impact materials science problems for national security and energy programs. The technologist will collaborate with stimulating scientific leadership and expertise provided by our team's internationally recognized technical staff, and will have the opportunity to learn relevant techniques from these staff members and other experienced technologists. The technologist will be a vital partner supporting and training other team members (e.g. postdocs, student interns) in relevant lab methods within their expertise. The technologist will augment staff research leadership, make self-motivated lab contributions, and critically partner in safe, regulated laboratory operations.

The successful candidate will:

- Engage in challenging and evolving experimental materials research activities
- Demonstrate flexibility and aptitude toward efficiently acquiring new technical skills as needed for future research activities
- Support the maintenance and basic operation of key materials processing and characterization systems, including high vacuum systems such as scanning electron microscopy, thin film physical vapor deposition systems (RF sputtering, pulsed-laser deposition, electron-beam evaporation), ion beam milling, as well as furnace operations and basic wet chemistry techniques
- Have the interest and ability to work with staff toward safely improvising creative lab solutions to further extend our experimental research capabilities
- Assist with Department safety duties and chemical inventory issues

Key functions of this role include, but are not limited to:

- Conduct thin film growth experiments via physical vapor techniques for R&D programs
- Use high-temperature tube furnaces with controlled gas flows to grow (via chemical vapor deposition) or process materials into specific microstructures (e.g. phases, orientations, morphologies, etc.)
- Operate an excimer laser to either (a) grow thin films via pulsed laser deposition, or (b) perform novel laser surface annealing experiments
- Perform structural characterizations (e.g. scanning electron microscopy, X-ray diffraction)
- Perform structural modifications via ion beam milling, focused ion beams, etc.
- Perform electrical or thermal conductivity measurements
- Perform routine data analysis and formally document results
- Develop new experimental processes, use novel analytical techniques, establish new characterization methods, optimize existing lab equipment, and perform experiments

- Develop, build, modify, repair, and maintain a wide variety of laboratory apparatus, and interface this equipment for data acquisition
- Develop and maintain material and process specifications to support engineering and scientific processes, and work with key suppliers and service contractors for critical systems
- Support documentation and publication efforts, including preparing information for scientific and engineering papers
- Perform work in a safe and compliant manner, seek out subject matter expert advice as needed, and maintain the necessary documentation

Qualifications We Require

- Associate degree or higher in science, technology, engineering, or mathematics (STEM) field, or the equivalent combination of education and/or experience
- An understanding of the scientific method and experimental procedures, with skills and knowledge in one or more areas of materials science, physics, electrical engineering, engineering technology, chemical engineering, or chemistry
- Familiar with high vacuum systems, and the basic operation of techniques for materials synthesis, structural characterizations, and electrical measurements
- Able to acquire and maintain a DOE Q-level security clearance

Qualifications We Desire

- Bachelor degree or higher in materials science, physics, electrical engineering, mechanical engineering, or related field
- Effective interpersonal and oral/written communication skills and the adaptability to effectively participate in teams with other Technologists and staff in support of the Nanoscale Science Department's varied and evolving research activities
- Desire to learn and master materials laboratory techniques as needed
- Ability to write operating procedures, methods of analysis, and laboratory safety documents
- The ability to work independently and self-sufficiently with high reliability and attention to detail as part of a larger team research effort
- Experience and demonstrated skill in conducting research, investigating anomalies and alternative solutions, and recommending solutions to problems
- Experience operating or maintaining relevant vacuum processing equipment (i.e. RF sputtering, ion beam milling, pulsed laser deposition, electron-beam evaporation)
- Experience operating or maintaining relevant materials characterization instrumentation (i.e. optical microscopy, SEM, energy dispersive X-ray analysis, etc.)
- Experience with laboratory support and maintenance techniques (i.e. basic electrical and electronics operations and troubleshooting, vacuum technology, wet chemistry techniques, accurate usage of Swagelok or other similar compression fittings, safe compressed gas operations relevant for lab operations, machine shop skills, and or semiconductor microfabrication techniques)

- Experience with laboratory set-up and maintenance activities, and the ability to develop expert knowledge of equipment and processes to make adjustments when necessary and recognize when equipment malfunctions
- Experience with scientific or engineering software (e.g. LabVIEW, AutoCAD, etc.), and the ability to interface equipment to data acquisition systems
- An active DOE-granted security clearance

About Our Team

The Nanoscale Sciences Department conducts collaborative research to advance the understanding of materials at the nanoscale and enable the collaborative development of creative solutions for Sandia's broad and evolving National Security and Energy Missions. Our research activities have broad impact and typically generate peer-reviewed, high-profile journal publications and presentations at professional scientific meetings. Our main research focus is on the discovery, understanding, and exploitation of properties and structures unique to the micro- and nanoscale, broadly directed along three thrusts:

1. Electrochemical Materials Science and Applications (e.g. energy storage, corrosion, chemical sensing, plating)
2. Electronic Materials Science for National Security Applications (e.g. nanostructured carbons for chemical sensing, energy storage, high conductivity wires/cables, thermal solutions, etc.; granular-metals for high-speed switching devices, protection of the Electric Grid, etc.; novel superconductors, etc.)
3. Nanostructured Materials Science and Applications (e.g. metal-organic frameworks for hazardous materials capture/storage, sensing, membranes, water treatment, catalysis)

Our team is committed to nurturing a culture compatible with a broad group of people and perspectives in accordance with the changing makeup of the workforce.

Join us and work towards your goals while making a difference!

Posting Duration.

This posting will be open for application submissions for a minimum of seven (7) calendar days, including the 'posting date'. Sandia reserves the right to extend the posting date at any time.

NNSA Requirements for MedPEDs.

If you have a Medical Portable Electronic Device (MedPED), such as a pacemaker, defibrillator, drug-releasing pump, hearing aids, or diagnostic equipment and other equipment for measuring, monitoring, and recording body functions such as heartbeat and brain waves, if employed by Sandia National Laboratories you may be required to comply with NNSA security requirements for MedPEDs.

If you have a MedPED and you are selected for an on-site interview at Sandia National Laboratories, there may be additional steps necessary to ensure compliance with NNSA security requirements prior to the interview date.