

Senior Engineer (two positions)

Description: The Stanford Nanofabrication Facility (SNF) at Stanford University is seeking Senior Engineers to help expand and diversify, as well as support, its research operations. The SNF is a 10,000 ft² cleanroom located on the Stanford campus, housing over 100 tools supporting electronics device fabrication to academic and industrial researchers for nearly 30 years. In addition, SNF has recently acquired oversight for two new satellite labs located in the same building. The SNF shared labs are first and foremost a service organization providing tools and know-how to academic and industrial researchers who numbered nearly 500 this year. A convergence of program initiatives now provides the opportunity to redefine shared experimental infrastructure needs for the School of Engineering and beyond. We seek creative, knowledgeable, scientists and engineers to provide know-how and develop resources to support existing and leading edge research areas. The successful candidate will support researchers and the research infrastructure they depend on for their work. This position will join an existing staff of 19 and report to the Lab Manager. Specific responsibilities include:

- 1. Lab operations:** Develop and implement processes to be used by researchers in the fabrication of their structures. Document and transfer knowledge to the lab community. Develop and implement user training programs. Provide high-level, engineering expertise for troubleshooting process and equipment problems to provide researchers tools that are not only functional, but perform consistently and predictably, and are safe to use. Evaluate and define workflow or hardware upgrades or modifications that improve safety, efficiency and/or capability of equipment for researchers. Identify and prioritize process issues in the lab which may affect the research of labmembers. Apply hands-on engineering expertise to solve these problems and to ensure they do not recur.
- 2. Research support:** Advise researchers requiring process and fabrication expertise. Provide technical leadership to enable researchers to explore work that integrates a broad range of disciplines. Work closely with stakeholders (faculty, lab staff, academic & industrial researchers) to identify new equipment that support new research directions. Contribute and participate in preparation of grant and contract proposals.
- 3. Safety:** SNF strives to foster a culture of safety. As a member of the Senior Staff, the Senior Engineer has a proactive role in defining and administering safety policy and procedures in the lab, both for labmember researchers and lab staff. The Senior Engineer will be a member of the lab Incident Response Team, which consists of SNF staff engineers who provide local expertise and support to the University's HazMat and Emergency Response Teams.
- 4. Outreach & education:** Engage in efforts (presentations, workshops, conferences) that help establish the SNF shared labs as a brand for the broader research community. Participate in activities that support "broader impacts" of technology and society. This may include engaging non-Stanford and industrial researchers, K-12 education, and undergraduate research programs.

Qualifications: Advanced degree (M.S. or Ph.D.) in one of the physical sciences or engineering or demonstrated equivalent experience.

- Hands-on research/applied research experience; publications or patents desirable.
- Hands-on experience in performing and directing development of processes and process modules, ideally, in a micro-/nano-fabrication R&D setting.
 - o Technical understanding of the basic fabrication processes of diffusion, deposition, etch, lithography and how these various functional areas are integrated in device fabrication;
 - o Fundamental understanding of the principles of basic equipment operations, such as vacuum and gas delivery systems, control systems and control theory, liquid handling systems, equipment facilities;
 - o Fundamental understanding and extensive experience in use of basic analytical tools common in micro- and nano-fabrication;
 - o Experience in practical use of statistical process control and experimental design;
 - o Working knowledge of laboratory and chemical safety in a research environment.
 - o Strong understanding of engineering principles in areas such as control theory, systems/logic communications, engineering design principles.
 - o Keen analytical & quantitative skills and attention to detail.
- Although the core competency of the SNF Labs is based in semiconductor fabrication technologies, its tool set is evolving to support new research demands. The candidate should have a strong background relevant to electronics fabrication, yet be flexible and well-versed in engineering fundamentals in order to adapt to a changing technology landscape. Familiarity required/experience desired in the following:
 - o Fabrication for cross-disciplinary research or other research applications outside of silicon electronics.
 - o Integrated systems, transfer/hybrid/flexible electronics, test/assembly.
 - o Rapid prototyping methods (3-D printing, CNC, CAD-CAM).
- The SNF is a team-oriented, collaborative, educational environment; excellent written and oral communications skills are required.

Desired Skills: Hands-on experience in troubleshooting equipment, particularly in using repair tools (leak detector, oscilloscope), and familiarity with equipment subsystems (PLC's, gas/pressure/vacuum controls, RF systems, and mechanical/robotic systems.) Experience in specifications for laboratory/building facilities (HVAC, PCW, water treatment) is also a plus.

To apply online, go to <http://stanfordcareers.stanford.edu/job-search> and select job Requisition ID 64687.