Principal Research Engineer
Micro and Nanotechnology Laboratory
College of Engineering
University of Illinois at Urbana-Champaign

The Micro and Nanotechnology Laboratory at the College of Engineering seeks applicants for the position of Principal Research Engineer. Reporting to the Director the Principal Research Engineer will provide leadership within multiple laboratory environments within MNTL for operation/maintenance of research equipment, development/implementation of safety policies, and student/staff training. Specific duties and responsibilities include:

- Lead group of staff engineers and technicians to maintain laboratory tools in top working condition, with emphasis upon process monitoring, preventive maintenance, and rapid troubleshooting. Guide the work of supervised staff by working with the Research Engineers to maintain the laboratory tools, properly monitor the tools and equipment, practice preventative maintenance tests, and rapidly troubleshoot. Provide guidance on, work directly with and train the Research Engineers on various techniques for using the fabrication/metrology equipment, and work directly with a variety of fabrication/metrology equipment in a hands-on fashion.
- Assure compliance with all applicable safety regulations and training certification for a laboratory that includes toxic gases, flammable chemicals, high voltage systems, vacuum systems, and strong acids/bases by meeting Department of Homeland Security and OSHA requirements.
- Manage procurement budget for equipment and supplies for ongoing lab operations by working with the MNTL business office to remain informed on sources of income, and the available operating budget based on income from ICR, user fees, and state allocations.
- Work with MNTL faculty and MNTL Director to develop a working 5-year plan for retirement of aging equipment, and replacement by tools with more advanced capabilities, and ensure plans are carried out in coordination with Facilities Manager.
- Supervise staff of fabrication process engineers, technicians, and lab supervisors consistent with MNTL priorities for safety, student training, equipment up-time, and equipment availability. This includes creating schedules, prioritizing tasks, and collaborating on problem solving.
- Implement a program of process control, preventive maintenance, and equipment monitoring to keep tools in top working order and delivering results that meet specifications. This includes teaching process engineers how to develop a strategy for test runs that measure critical operating outputs for each piece of equipment, plotting data, and reporting process control data to users. Develop and adhere to schedules for preventative maintenance. Develop range for operating specifications that are considered to be “in spec” for tools.
- Advise MNTL faculty and MNTL Director on the selection and purchase of new laboratory capabilities that meet future anticipated needs and maintaining a set of capabilities that is state-of-the-art.
- Engage directly with students and faculty to suggest process options and to diagnose process problems including individual meetings with students for process consulting, delivery of process modules for new users, speaking directly with faculty to address process and equipment issues, organize and chair meetings of the Cleanroom Operating and Safety Committee, and being a member of the MNTL Equipment Committee.
- Represent MNTL to the College of Engineering, University, Department of Homeland Security, and external groups for all meetings involving safety policies, nanofabrication facility working groups, and others as assigned.

- With the MNTL Director, manage lab operating budget, and suggest/implement policies that utilize financial resources effectively including awareness of the operating budget and choosing options for equipment and facilities that are consistent with the available budget, whenever possible. For extra-ordinary expenses, write documented requests for additional funds from the College. Maintain financial discipline across all the engineers that are supervised. Be aware of spending and be prepared to suggest alternatives when necessary.
- Establish, continuously refine, and provide training on cleanroom laboratory safety, policies, and procedures; ensuring all users are up-to-date on training prior to using the cleanroom and equipment.
- Train researchers and laboratory users in the proper operation of various laboratory tools and provide general processing procedures associated with those tools. This may also entail the formulation and distribution of suitable written instruction sets, video-recorded training material, and personal delivery of training to groups of MNTL students.
- Work with UIUC students who utilize the laboratory with their research projects, including but not limited to, providing training on equipment and laboratory policies.
- Moderate regularly scheduled monthly meetings with cleanroom users to address problems and discuss laboratory equipment maintenance and operation.
- Consult, assist, and perform duties involving cleanroom equipment as required by any contracted "foundry" work including assuring that the work is done correctly by cleanroom staff and proper training is provided.
- Act as a University resource for information regarding equipment and processes related to microelectronic device fabrication by fielding Faculty, student, and external user inquiries regarding MNTL capabilities.
- Assist in the coordination of outreach activities and program reviews by taking part in organizing MNTL's participation in Engineering Open House, visits by NSF program managers, organizing participation in workshops such as the BioNanotechnology Workshop.
- Assume additional appropriate duties to further the mission of the laboratory.

Minimum Qualifications:
- Bachelor's degree in Electrical Engineering, Materials Science, or related discipline.
- 1-3 years' direct supervisory experience involving semiconductor process development and responsibility for semiconductor process equipment.
- 3-5 years' experience (not counting graduate school or postdoc research) working with semiconductor device fabrication process development and responsibility for semiconductor process equipment.
- 3-5 years' experience (not counting graduate school or postdoc research) working in a cleanroom environment.

Preferred Qualifications:
- Master's or Doctoral degree in Electrical Engineering, Materials Science, or related discipline.
- 6-10 years' experience (not counting graduate school or postdoc research) working in a cleanroom environment.
- 3-5 years' managing experience (not counting graduate school or postdoc research) in a cleanroom environment.

The Principal Research Engineer position is a full-time, benefits-eligible academic professional position appointed on a 12-month service basis. The expected start date is as soon as possible after the closing date. Applicants may be interviewed before the closing date; however, no hiring decision will be made until after that date. Salary is commensurate with experience and qualifications.

To apply for this position, please create your candidate profile at http://jobs.illinois.edu and upload your cover letter, resume, and names/contact information for three references by February 29, 2016. Full consideration will be given to complete applications received by the closing date. For further information regarding application procedures, contact Leslie Lewin Reinhart, lewin@illinois.edu, (217) 300-3872.

The University of Illinois conducts criminal background checks on all job candidates upon acceptance of a contingent offer.

Illinois is an equal opportunity employer and all qualified applicants will receive consideration for employment without regard to race, religion, color, national origin, sex, sexual orientation, gender identity, age, status as a protected veteran, status as a qualified individual with a disability, or criminal conviction history. Illinois welcomes individuals with diverse backgrounds, experiences, and ideas who embrace and value diversity and inclusivity. (www.inclusiveillinois.illinois.edu).