

Of Special Interest

Chemistry and Chemical Engineering Interns at Micron Technology, Inc.

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Professional opportunities for chemistry and chemical engineering students before graduation? You bet. Micron Technology, Inc., hires summer and, in some cases, academic-year interns to work in their fields of study. Who's eligible to apply? High school graduates enrolled full-time in college, university, or technical school undergraduate programs or in masters or doctorate graduate programs.

Company Overview

Located in Boise, Idaho, Micron Technology, Inc., and its subsidiaries manufacture and market dynamic random access memory (DRAM), static RAM (SRAM), nonvolatile flash



(a)



(b)

FIGURE 1. (a) MICRON TECHNOLOGY, INC., BOISE, IDAHO; (b) PHOTOLITHOGRAPHY BAY

memory and other semiconductor memory components, remote intelligent communications (RIC) products, complex printed circuit board assemblies, and personal computer systems. Micron currently employs more than 9,500 team members: approximately 6,400 in semiconductor memory manufacturing, 1,600 in personal computer manufacturing, 800 in contract manufacturing, and 700 in other areas.

Intern Program

Since its founding in 1978, Micron has employed interns throughout the company to offer students hands-on experience in technical fields and opportunities to join Micron's technical team after completing undergraduate or graduate degrees. The intern program was formalized in the late 1980s and by 1996 has grown to include 79 interns working alongside team members in fabrication, probe, assembly, test, product engineering, quality assurance, and administration. The 1996 interns represent 21 schools and technical programs nationwide, allying Micron with current academic programs and potential employees.

Chemistry and Chemical Engineering Interns

Of interest to chemistry and chemical engineering students, Micron offers internships in fabrication's wet process engineering and photolithography groups and in its analytical



FIGURE 2. MICRON TECHNOLOGY, INC., 1995 SUMMER INTERNS

chemistry and surface analysis laboratories. In wet process interns investigate alternative ways to strip photoresist and measure the effectiveness of a resist strip, study the correlation between bath contaminants and wafer contamination in various process chemistries, analyze data on process conversions, and clean-process wafers.

In photolithography, interns in R&D have worked on production-oriented sustainment, learning how to qualify equipment and run product through. Interns have also worked on the polyimide process, dispensing polyimide onto the wafers after fab processing, and assisted in photolithographic simulation and simulation verification. Incidentally, both recent interns have been offered regular positions. In the fabs, plans are underway to hire interns to coat and develop wafers, evaluate new photoresists and their interaction with the steppers, optimize stepper settings in relationship to numerical aperture and sigma settings, and work with metrology to monitor critical dimensions.

Interns in the laboratories set up equipment and take and analyze samples, working with the latest technology. Micron's analytical chemistry laboratory is one of the best equipped analytical chemistry laboratories in the Northwest, and nearly all of its equipment is less than five years old. Past intern projects in this laboratory included sampling effluent from the scrubbers for acids and solvents and examining the correlation between possible contamination in the wet-process baths and contamination on the wafers. Equipment in the analytical chemistry laboratory includes a gas chromatograph (GC), a gas chromatograph with mass spectrometer (GCMS), inductively coupled plasma spectrometers (ICPs), atomic absorption spectrometers (AASs), ICP



FIGURE 3. LORNA MITSON, CHEMICAL ENGINEERING, MONTANA STATE UNIVERSITY

mass spectrometers (ICPMSs), a total organic carbon analyzer (TOC analyzer), a Fourier transform infrared spectrometer (FTIR), and thermal analysis tools. Two of three recent interns in this laboratory have been hired as regular employees.

To service the company's changing needs, the surface analysis laboratory is also well-equipped. Chemistry interns as well as physics and materials interns use Auger electron spectroscopy (AES), secondary ion mass spectroscopy (SIMS), atomic force microscopy (AFM), small spot Fourier transform infrared spectroscopy (FTIR), and x-ray photoelectron spectroscopy (XPS). In this laboratory, a recent chemistry intern worked to identify possible contaminants of fabrication materials.

For More Information

For those interested in applying for a Micron internship, check the Micron web site, www.micron.com, or call the Personnel Department at (208) 368-4141. Opportunities for chemistry and chemical engineering students are numerous and varied at Micron Technology, Inc.. They include work on memory and other semiconductor memory components, remote intelligent communications (RIC) products, complex printed circuit board assemblies, and personal computer systems.