PHYSICS CAREERS

Semiconductor Technician

Electronic chips are used in a wide variety of devices, from toys to phones to computers. To learn more about chip making as a career, read the interview with Etch Process Engineering Technician Brad Baker, who works for Motorola.

Brad Baker is creating a recipe on the plasma etch tool to test a new process.

What training did you receive in order to become a semiconductor technician?

My experience is fairly unique. My degree is in psychology. You have to have an associate's degree in some sort of electrical or engineering field or an undergraduate degree in any field.

What about semiconductor manufacturing made it more interesting than other fields?

While attending college, I worked at an airline. There was not a lot of opportunity to advance, which helped point me in other directions. Circuitry has a lot of parallels to the biological aspects of the brain, which is what I studied in school. We use the scientific method a lot.

What is the nature of your work?

I work on the etch process team. Device engineers design the actual semiconductor. Our job is to figure out how to make what they have requested. It's sort of like being a chef. Once you have experience, you know which ingredient to add.

What is your favorite thing about your job?

I feel like a scientist. My company gives us the freedom to try new things and develop new processes.

Has your job changed since you started it?

Each generation of device is smaller, so we have to do more in less space. As the devices get smaller, it becomes more challenging to get a design process that is powerful enough but doesn't etch too much or too little.

What advice do you have for students who are interested in semiconductor engineering?

The field is very science oriented, so choose chemical engineering, electrical engineering, or material science as majors. Other strengths are the ability to understand and meet challenges, knowledge of trouble-shooting techniques, patience, and analytical skills. Also, everything is computer automated, so you have to know how to use computers.