LTD Module Development Engineer (Ph.D.) – Oregon

Hillsboro, Oregon, United States

Job ID JR0256345

Job Category Manufacturing and Process Development

Work Mode On-site Required

Experience Level Entry Level

## Job Description

Join Intel and build a better tomorrow. Intel is in an exciting transformation, with a vision to create and extend computing technology to connect and enrich the lives of every person on Earth. So, join us and help us create the next generation of technologies that will shape the future for decades to come.

As the world's largest chip manufacturer, and a global leader in innovative technology, Intel strives to make every facet of semiconductor manufacturing state-of-the-art from semiconductor process development and manufacturing, through yield improvement to packaging, final test and optimization, and world-class Supply Chain and facilities support.

**What we do:**

The Logic Technology Development (LTD) organization delivers the latest process technology innovations to drive Intel's amazing product roadmap. Look at **Life Inside Intel** here.

**What we offer:**

- We foster a collaborative, supportive, and exciting environment where the brightest minds in the world come together to achieve exceptional results.
- We give you opportunities to transform technology and create a better future, by delivering products that touch the lives of every person on earth.
- We offer a competitive salary and financial benefits such as bonuses, life, and disability insurance, opportunities to buy Intel stock at a discounted rate, and Intel stock awards (eligibility at the discretion of Intel Corporation).

- We are constantly working on making a more connected and intelligent future, and we need your help. Change tomorrow. Start today.

**By applying to this Module Engineering position, you will be considered for multiple roles by Intel leaders representing the following areas:**

- Etch
- Metrology
- Planarization
- Lithography
- Dielectrics
- Module Integration Yield
- Electrical Characterization
- Diffusion
- Frame Automation

**Module Engineering Responsibilities include:**

- Defining and developing procedures and equipment configuration for the module with the end goal of maximizing quality, equipment availability, and output.
- Defining projects to meet quality, reliability, cost, yield, productivity, and manufacturability requirements.
- Driving improvements in quality, reliability, cost, yield, process stability/capability, productivity, and safety/ergonomics over variables such as material, method, equipment, environment, and operating personnel.
- Developing solutions to problems utilizing formal education, statistical knowledge, and problem-solving tools.
- Establishing the process control systems for the process module and sustaining the module through volume ramp.

- Developing strategy to resolve difficult problems and establishes systems to deal with these problems in the future.

- Design and execute experiments and analyze data necessary to develop processes that meet engineering specifications for manufacturing that include safety protocols, automation, facility, and supply chain in addition to device performance and yield.

- Work with industry partners and equipment suppliers to develop and implement equipment, identify equipment capability shortcomings, propose, and evaluate hardware modification to mitigate issues, and implement preventative maintenance needed for stable process lines.

- Install and qualify capacity at the LTD site and operate the manufacturing line in the manufacturing of revenue products.

- Participate in the transfer of technology to other Intel factories via the Copy Exactly methodology through training and audit of installation/qualification to ensure matched processing across sites.

- In addition to these responsibilities, you will respond to production requests for material disposition and alarm response.

## Qualifications

You must possess the minimum qualifications below to be initially considered for this position. Preferred qualifications are in addition to the minimum requirements and are considered a plus factor in identifying top candidates. The experience listed below may be obtained through schoolwork, classes and project work, internships, military training, and/or work experience.

**Minimum Qualifications:**

- **Must possess a PhD degree** in Electrical Engineering, Electrical Computer Engineering, Chemical Engineering, Material Science, Physics, Chemistry, Computer Science, or a

Semiconductor-related STEM (Science Technology Engineering & Math) field of study (with a focus on hands-on experimental research). Must be able to start within 8 months.

**Preferred Qualifications:**

- Statistics Coursework, Statistical Process Control (SPC) or Design of Experiments (DOE) principles, and engineering analysis tools
- Experimental lab work
- Semiconductor and transistor device physics
- Advanced transistor device structures and architectures including fabrication (e.g., lithography, etch, film deposition, cleans, chemical-mechanical planarization, etc.) with in-depth knowledge of semiconductor device physics and process integration
- Data analysis skills with demonstrated ability to construct clear data-based problem statements
- Semiconductor processing fundamentals (lithography, wet etch, dry etch, chemical and or mechanical polishing, etc.)
- Design of experiments
- Materials and physical device characterization (SEM, TEM, etc.) and fundamentals of semiconductor device testing
- Statistical, data analysis (MATLAB, Excel, JMP, etc.)

- **Benefits:**
- We provide benefits that promote a healthy, enjoyable life: excellent medical plans, wellness programs, and amenities, time off, recreational activities, discounts on various products and services, and many more creative rewards that make Intel a Great Place to Work! Find more information about our amazing benefits here.