Optoelectronic / Photonics / Laser Engineer – Test & Characterization

SemiNex Corporation is an advanced optoelectronics and semiconductor laser company developing high-performance Fabry–Perot (FP) lasers, DFB lasers, and Semiconductor Optical Amplifiers (SOAs) for datacenter, telecom, sensing, and emerging photonics applications. We are seeking a hands-on engineer to design, build, and operate laser and SOA test benches and to characterize device performance across wafer-level and packaged devices.

The Optoelectronic / Photonics / Laser Engineer will be responsible for developing test benches, executing electro-optical characterization, and analyzing performance of FP lasers (single mode & multimode), DFB lasers, and SOAs. This role requires strong experimental skills, familiarity with optical instrumentation, and the ability to work closely with device design, fabrication, and packaging teams.

Key Responsibilities

Test Bench Development

- Design, build, and maintain optical and electrical test benches for:
  - Fabry–Perot lasers (single-mode & multimode)
  - DFB lasers
  - Semiconductor Optical Amplifiers (SOAs)
- Integrate laser drivers, TEC controllers, optical fibers and measurement instruments
- Develop automated test setups where applicable

Device Characterization

- Perform electrical, optical, and thermal characterization, including:
  - L–I–V curves
  - Threshold current, slope efficiency
  - Optical spectrum (SMSR, linewidth, mode structure)
  - Output power vs current and temperature
  - SOA gain, saturation power, noise figure
  - Wavelength tuning and thermal behavior
- Characterize devices at chip-level, bar-level, and packaged-device level

Data Analysis & Reporting

- Analyze and interpret test data
- Generate clear test reports, plots, and summaries
- Identify performance trends, anomalies, and yield impacts
- Provide feedback to epitaxy, design, and fabrication teams

Collaboration & Support

- Support process development, device debugging, and failure analysis
- Work closely with R&D, process, packaging, and product teams
- Assist with customer data requests and qualification testing

Required Qualifications

- Bachelor's, Master's, or PhD in Photonics, Optoelectronics, Electrical Engineering, Physics or Applied Optics
- Hands-on experience with semiconductor lasers and/or SOAs
- Strong experimental and laboratory skills
- Experience with optical test equipment, such as:
  - Optical Spectrum Analyzers (OSA)
  - Power meters
  - High-speed photodetectors
  - Laser diode drivers & TEC controllers
- Familiarity with fiber coupling, free-space optics, and probing
- Ability to analyze data using Python, MATLAB, or equivalent tools
- Eligibility to work in the United States

Preferred Qualifications

- Experience with DFB lasers and SOA characterization
- Knowledge of wafer-level or bar-level testing
- Understanding of InP-based devices (InGaAsP / AlInGaAs)
- Experience with automated testing and scripting
- Background in datacenter, telecom, or high-power laser applications

Compensation & Benefits

Competitive compensation package commensurate with experience, including base salary, benefits, and company stock.

Work Location:

Danvers, MA near I-95 and US Route 1. This position is factory based.