

Class Code: 0569
Position #: (PSA)
Grade: 13
Date: 11/90; 8/01

THE UNIVERSITY OF RHODE ISLAND

Position Description

TITLE: Electrical Materials Engineer
DIVISION: Academic Affairs
REPORTS TO: Chairman, Department of Electrical Engineering
GRADE: 13
SUPERVISES: Lab support staff and outside contractors

BASIC FUNCTION:

Responsible for the maintenance and operation of materials and optical laboratories and facilities in the Department of Electrical Engineering. Assist faculty and students in carrying out research and laboratory projects. Design instruments and experimental apparatus and responsible for their fabrication and installation.

DUTIES AND RESPONSIBILITIES:

Overall responsibility for the daily operation and maintenance of materials and optical laboratories and facilities in Electrical Engineering.

Laboratory instruction in basic undergraduate laboratories in materials and optics.

Maintain and improve or modify (as required for current research and teaching) equipment involving research including high-vacuum and optical systems, fabricates (or monitors fabrication by outside contractors) instrumentation for laboratory projects.

Grow and prepare (cuts and polishes) crystals for optics and semi-conductor research, design and install instrumentation for materials and optical laboratories.

Supervise undergraduate and graduate students carrying out their laboratory projects which involve use of very complex, easily damaged and very expensive equipment.

Order and stock supplies of special laboratory materials including: high-pressure gases, liquid nitrogen, optical components, semi-conductor materials, machine shop parts and supplies. Maintain inventory of equipment and supplies.

Prepare high precision experimental jigs and fixtures for high-vacuum and optics instrumentation, semi-conductor devices, fiber optical communication experiments.

Electrical Materials Engineer

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Manage the Sensors and Surface Technology Partnership Laboratory (faculty from Electrical Engineering, Chemical Engineering, Mechanical Engineering, Physics, Chemistry, Industrial Engineering).

Organize the Sensors and Surface Technology Partnership's annual poster session.

Manage the cost center for the Perkin Elmer Surface Analyzer, including performing analyses for all University activities and private industry; establishing and maintaining yearly budgets; establishing user rates for internal and external use.

With Perkin Elmer 5500 Surface Analyzer, perform outreach service to local RI communities, such as DB Thin Films (Woonsocket), On Semiconductor (East Greenwich), and Elmwood Sensors (Pawtucket).

Serve as a member of the Forensic Science Partnership, providing training and support on instruments shared by the Sensors and Surface Technology Partnership.

Provide outreach service to the RI State Crime Laboratory.

Perform repairs on Elmer Perkin 5500 Surface Analyzer, and, for the SST and Forensic Partnership, provide support for and training on numerous instruments (e.g., two scanning electron microscopes, atomic force microscope, and Raman Spectrometer).

QUALIFICATIONS:

Bachelor's degree required, master's degree preferred, in technology, engineering, physics or other applied science specializing in material, solid state or optical sciences. Background in chemical, optical and tool-making technology, electronics and mechanics is desirable. Five years' experience with laboratory facilities and equipment and practice in optical polishing, crystal cutting, operation and service of high-vacuum equipment, high-precision machine tools, cryogenic apparatus, semi-conductor processing, optical instrumentation and fiber optics required.

ALL REQUIREMENTS ARE SUBJECT TO POSSIBLE MODIFICATION TO REASONABLY ACCOMMODATE INDIVIDUALS WITH DISABILITIES.

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