**Research Engineer Standard Job Description**

**Classification Title:** Research Engineer

**FLSA Exemption Status:**Exempt

**Pay Grade:** Commensurate

**Job Description Summary:**

The Research Engineer, under general supervision, provides design expertise and experience in support of the Texas A&M University System (TAMUS) members’ missions. Produces, reviews, and implements designs into first article hardware.

**Essential Duties and Responsibilities:**

**30% System Design and Component Development**

* Performs multi-disciplinary designs of first-of-a-kind experimental systems and components.
* Reviews and implements experimental systems and components designs.
* Develops and refines designs for semiconductor and temperature detectors.
* Ensures designs meet mechanical and electrical specifications.
* Assists in the publication of technical papers and applications for patents.
* Coordinates with internal teams to monitor design progress and resolve issues.

**20% Fabrication and Testing**

* Performs semiconductor and temperature detector fabrication.
* Shapes and polishes crystals for detector systems.
* Coordinates detector housing and packaging efforts.
* Tests fabricated components for functionality and quality control.
* Documents the fabrication process, including circuit maps, defects, and repairs.
* Performs microscopic circuit inspection and repairs on detectors.
* Conducts cryogenic testing of fabricated detectors.
* Uses thin film characterization techniques like SEM, AFM, and XRD.

**10% Technical Support and Training**

* Provides user training on detector fabrication and system operation.
* Assists students and postdocs with experimental design and construction.
* Provides ongoing technical support to ensure project success.
* Facilitates training on safety protocols for lab personnel.
* Oversees the work of graduate and undergraduate students.

**10% Lab Management and Process Engineering**

* Manages lab setup, maintenance, and safety protocols.
* Coordinates lab and equipment maintenance, including plumbing and chemical handling.
* Oversees detector packaging and cryogenic system design.
* Responsible for process engineering for systems like deposition and etching.
* Monitors and adjusts equipment specifications and modifications.
* Designs and tests new fixtures for mechanical, electrical, and vacuum systems.

**10% Project Monitoring and Documentation**

* Prepares and reviews operational and special reports for program reviews.
* Monitors project timelines and identifies potential issues.
* Recommends improvements and adjustments to processes.
* Documents progress for SuperCDMS, MINER, TESSERACT, and DOE-funded projects.

**20% Duty Title (for the department's use)**

* Remaining Percentage Can Be Determined by Department to Meet Business Needs or Can Be Incorporated into Percentages Above.

**Qualifications:**

**Required Education:**

* Doctoral degree or equivalent combination and experience

**Required Experience:**

* Six years of related experience.

**Required Licenses and Certifications:**

* None

**Required Knowledge, Skills, and Abilities:**

* Ability to multitask and work cooperatively with others.

**Additional Information:**

**Machines and Equipment:**

* Computer
* Telephone
* Copier/Scanner

**Physical Requirements:**

* None

**Other Requirements and Factors:**

* This position is security sensitive
* This position requires compliance with state and federal laws/codes and Texas A&M University System/TAMU policies, regulations, rules and procedures
* All tasks and job responsibilities must be performed safely without injury to self or others in compliance with System and University safety requirements

**Is this role ORP Eligible? If so, it needs to meet the criteria on the** [**Rules and Regulations of the Texas Higher Education Coordinating Board**](https://reportcenter.highered.texas.gov/reports/data/user-friendly-version-of-ch-25/)**.**

[ ]  **Yes**

[x]  **No**

**Does this classification have the ability to work from an alternative work location?**

[ ]  **Yes**

[x]  **No**