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## POSITION DESCRIPTION

Job Title: Materials Engineer III  Exempt  
Department name: Mechanical Engineering  Non-exempt  
Manager: Mechanical Engineering Manager  
Work location: Billerica, MA

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### **Job summary**

Performs engineering work requiring a high degree of competence in the areas of high temperature metals and ceramics applications.

### **Essential duties and responsibilities**

- Lead engineering projects to develop new high temperature electrical heating elements optimizing material selections and sound thermal engineering principles.
- Perform failure analysis and develop engineer solutions for improving performance and reliability of high temperature thermal systems.
- Perform structural engineering and material selections for high temperature applications.
- Make metal selection recommendations for high temperature applications in the presence of chemicals.
- Actively participate as a global team member with other Engineers, Designers, Sales, Marketing, Manufacturing, and Purchasing personnel to complete design projects quickly and cost effectively.
- Coordinate project tasks and schedules, delegate work to designers/drafters and support staff as required.
- Responsible for the design, prototyping, testing, specification and documentation of thermal processing systems, subassemblies and components. Responsible for the layout and detailed mechanical design and documentation of subsystems and subassemblies.
- Lead projects involving new concepts and approaches to the design of new products.
- Recommends materials and components for inclusion in design specifications based on research, experience, experimental results and catalogue reference data.
- May travel globally to meet key customers, review customer specs, oversee equipment installations, solve technical problems with equipment in the field, provide technical expertise to the Sales organization, work with and develop suppliers, interact and direct engineering activities.
- Study industry standards and ensure that designs are safe and meet applicable industry safety requirements.
- Lead cross functional design reviews with Engineering, Quality, Manufacturing, Sales and customers.
- Prepare and present written, oral and visual materials to support proposals, presentations, design reviews and written reports.
- Develop cost estimates, schedules and budgets for proposed projects
- Maintain project folders and report project status to Manager, Engineers and others on a regular basis.
- Plan, perform or direct and document experiments to prove design performance.
- Strictly adhere to all BTU safety policies.

## **Skills and knowledge**

- Intense knowledge of metallurgy, ceramics and refractories in high temperature applications
- Strong structural mechanical engineering skills
- Strong knowledge of metals and chemical interactions
- Strong knowledge of high power resistance heating wire principles, design criteria, and applications
- Strong understanding of 3D Mechanical CAD and detailed drawings, Pro-Engineer/Creo preferred.
- Able to make decisions independently on engineering problems
- Able to handle multiple projects and tasks concurrently
- Strong ability to work with others, be an active part of a cross functional team, including direct communications with key customers.
- Good problem solving and trouble shooting skills
- Highly organized and detail oriented with the ability to prioritize, manage multiple projects and work to a schedule

## **Education and experience**

- BS Mechanical Engineering with a focus (MS) in Material Science, specifically metallurgy and ceramics or similar
- Minimum of 10 years engineering experience