



## **SENIOR MECHANICAL ENGINEER**

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### **OVERVIEW :**

The Senior Mechanical Engineer is required to determine system requirements, build detailed models, create complex designs, source representative prototypes, and test full functionality of mechanical components, assemblies, and tools required for specific systems. They will apply their in-depth knowledge of engineering principles including materials selection, stress analysis, design for manufacturability & reliability, and tolerance analysis to design products related to high efficiency electric motor, battery and propulsion systems, including rapid prototypes and final production designs. Experience at balancing competing design constraints and inputs from other team members is essential, in addition to the ability to conduct professional design reviews (internal, supplier, and customer), operate within design constraints of cast and molded component manufacturers (both metal and polymer) and fully document all design revisions.

Requires a bachelor's degree in mechanical engineering with at least 7 years of experience in the field or in a related area. Familiar with a variety of tools, concepts, standards, and practices including high-volume manufacturing design constraints. Relies on extensive experience and judgment to plan and accomplish complex goals on aggressive schedules. Is the key mechanical designer within a cross-functional team. May lead and direct the work of junior engineers, technicians and sub-contractors. A wide degree of creativity and latitude is expected.

### **QUALIFICATIONS AND KNOWLEDGE**

- Bachelor's degree or higher in Mechanical Engineering
- Minimum of 7 years of experience in design of complex mechanical and electromechanical systems
- In-depth 3D CAD expertise required, Solidworks preferred.
- Direct experience with tolerance analysis; familiarity with stress and thermal analysis
- Knowledge of design constraints for injection molding and casting processes
- Experience with both quick-turn prototypes and high volume manufacturing designs
- Automotive / Electric Motor / Battery production design experience preferred
- Experience with the use of CMM tools to accurately characterize components
- Familiarity with Project Management tools a plus
- EIT or P.E. preferred or a demonstrated history of continuing education
- Proven ability for independent thought and creativity under tight deadlines in a team environment

### **ESSENTIAL DUTIES AND RESPONSIBILITIES**

- Analyze customer requirements, propose solutions /design concepts, determine project direction
- Create design specifications and document all aspects of design from solid modeling to manufacturing prints. Lead critical design reviews
- Detailed mechanical designs for advanced electric motors, and high energy-density battery systems
- Verify concepts through design-assembly-test-debug of rapid prototypes
- Lead the creation of detailed BOMs for each project as well as the initial creation of quality / inspection documentation.
- Provide schedule, cost, and resource estimates to project management
- Research and develop new products & concepts
- Collaborate with senior researchers in addition to mentoring junior staff engineers