

Senior Mechanical Engineer - Thermal

Job description

Essential Functions/Major Responsibilities:

- *Principal Thermal Engineer* for the company, specializing in test handler automation for the semiconductor industry.
- Possess a comprehensive understanding of heat transfer, including expertise in materials selection, thermal systems, and thermal management systems.
- Act as a *Thermal Modeling Expert*, proficient in creating and analyzing complex conjugated heat transfer and CFD models for both liquid and air systems.
- Conduct and interpret thermal models, including turbulent and laminar flow modeling, as well as conduction, convection (both natural and forced), and radiation heat transfer mechanisms.
- Design, develop, and optimize thermal management systems to ensure efficient heat dissipation and temperature control.
- Perform data analytics and data analysis to interpret CFD modeling results, experimental data, and system performance metrics.
- Drive the design and problem-solving efforts of the team to complete tasks on schedule.
- Lead and guide engineers across disciplines to meet project objectives and deadlines.
- Define, schedule, and monitor projects, ensuring task completion and status updates.
- Interface with customers to understand requirements and provide technical support.
- Act as an engineering liaison with vendors, field service teams, and remote company locations.
- Design and conduct experiments to evaluate system performance, analyze data, and recommend improvements.
- Utilize data analytics tools to assess and improve experimental setups and system designs, addressing issues such as material selection and leakage prevention.
- Guide, lead, and train technicians, designers, and engineers through influence, fostering a collaborative and productive team environment.
- Domestic and international travel required.
- Perform other work-related duties as assigned.

Supervisory Responsibility:

Provides work leadership or technical guidance to employees.

Qualifications:

- *Education:* Bachelor of Science in Mechanical Engineering or Physics; MS/PhD degree preferred.
- *Experience:* Minimum of ten years' experience in thermal system design and control, with superior leadership skills.

Skills/Technical Requirements:

- Proficiency with Flotherm, COMSOL, or similar thermal modeling software.

- Expertise in SolidWorks/AutoCAD (latest release), and PC software.
- Familiarity with turbulent and laminar flow modeling.
- Proficiency in modeling conduction, convection (natural and forced), and radiation heat transfer mechanisms.
- In-depth knowledge of semiconductor packages and manufacturing processes.
- Exceptional analysis and problem-solving skills.
- Strong data analytics and data analysis capabilities, with experience interpreting CFD modeling results and experimental data.
- Experience in the design and optimization of thermal management systems.
- Understanding of best engineering practices and ability to follow existing guidelines and processes.
- Experience with designing electro-mechanical parts, subassemblies, gears, racks, mechanisms and movements required.
- Familiarity with automation, robotics, aluminum machining, hardened gears, thermal concerns, wear on materials and aging.
- Well versed in failure element analysis (FEA), mean time between failure (MTBF) and failure modes and effect analysis (FMEA).
- Proficiency with SolidWorks/Cosmos (latest release).
- Practical experience with engineering documentation (i.e. detail drawings, fabrication specifications, Bills of Materials, Engineering Change Orders, etc.)
- In-depth knowledge of GD&T standards and applied experience.
- Excellent verbal and written communication skills.
- Ability to work independently on projects and collaborate effectively with team members.
- Computer skills including all MS Office applications.

Physical Demands/Strengths:

Prolonged periods of sitting at the computer terminal. Ability to use keyboard.
Ability to lift up to 20 lbs., occasional exertion.

Protective Devices Required:

In required areas.

Job Location:

The position is in the office. Domestic and international travel may be required.
Works in lab environment with constant or intermittent noise.

Job Type: Full-time

Salary: \$140,000.00 - \$160,000.00 per year

Benefits:

- 401(k)

- 401(k) matching
- Dental insurance
- Employee assistance program (EAP)
- Health insurance
- Flexible spending account (FSA)
- Health savings account (HSA)
- Life insurance
- Paid time off (PTO)
- Referral program
- Vision insurance
- Voluntary Insurances