



Job Title: Sensor Development Engineer	Dept:	Engineering
Reports to: Director of Engineering	Division:	Ithaca, NY
Hours: Full-time / 40+ hrs./wk.	Rev Date:	03-04-21

Primary Function

As a Development Engineer in the Sensors Group, this position will play a critical role in the development of multi modal sensing, as well as sensor prototype testing and cost/performance optimization. The candidate will be heavily involved with developing and building prototype designs and testing cutting-edge prototype sensors.

I. Duties and Responsibilities

- Solve tough engineering problems, and work with other engineers to integrate cutting-edge functionality into novel prototypes
- Design, develop, build prototypes, optimize, and tune signal-based algorithms to solve interesting problems sensor design
- Maintain constant awareness of technologies, scientific developments, design software and hardware capabilities, as well as software tools to make the prototypes functional
- Process and analyze R&D test data to integrate new knowledge of product development
- Inventing and developing sensor materials, technologies, sensing systems to create new product opportunities for TSI.
- Designing experiments, building apparatus, collecting and analyzing real world data to demonstrate fitness for use, robustness, and confirm efficacy in intended application.
- Building and testing complex prototypes leading the low cost DFM-based product designs
- Lead the company effort to build effective FMEA models of all sensors in PzFlex software
- Utilize Design for Manufacturability guidelines to create products at the lowest possible cost of manufacturing while attaining desired product functionality.
- Willingness to perform other duties as requested, directed or assigned by Management

II. Working Relationships

- Work cooperatively with the new product development engineering and R&D teams
- Work closely with various core tech teams and other organizations to define prototyping scope and applications towards various technology roadmaps and product
- Interact with management and other departments as needed

III. Education and Experience

- BS degree in biomedical engineering, electrical engineering, physics, or related discipline is preferred. A strong physics background is highly desired.
- Strong mathematical skills are necessary
- Specific knowledge of piezoelectric principle is highly desirable.



Job Title: Sensor Development Engineer	Department:	Engineering
Reports to: Director of Engineering	Rev Date:	03-04-21

- The candidate must be competent in a programming language such as, but not limited to, MATLAB, C++, Python, Mathematica, etc., and be capable of writing software routines to run experiments including data collection, storage, and basic data reduction.
- 2+ years of experience preferred in developing and testing sensors and signal processing algorithms in real-world or comparable settings
- Demonstrated experience in building sensor prototypes, testing them in a lab environment and successively adjusted the prototype design to meet DFM goals
- Experience with test equipment, including data acquisition and processing, thermal chambers, network analyzers, etc.

IV. Knowledge, Skills and Abilities

- The candidate will be expected to spend large amounts of time in the lab as well as at the computer, performing hands-on prototype design & development tasks.
- The candidate must be able to work with multidisciplinary teams and must possess excellent communication skills.
- The individual must be highly self-motivated and must thrive in a multidisciplinary team environment.
- Excellent written and oral communication skills are required
- A working knowledge of designing prototype sensor designs in SolidWorks
- Must be passionate about creating new devices and technologies, and ready to learn on the fly, solve complex problems, work closely with others, and creatively approach design and engineering tasks at all scales.
- Strong electronic systems aptitude and problem-solving skills.
- Strong data analytics skills including familiarity with principles of statistics
- Ability to use logic when evaluating and synthesizing multiple sources of information.
- Demonstrates understanding of interpreting analysis to include, but not limited to, its meaning, importance, and implications.
- Demonstrates ability to defend analytic judgements with sound, logical conclusions and adapt analytic judgments when presented with new information, evolving conditions, or unexpected developments.
- Demonstrates ability to produce timely, logical, and concise analytic reports, documents, assessments, studies, and briefing materials in formats including Microsoft Office tools (e.g., Excel, Word, PowerPoint, etc.), electronic/soft copy matrices and/or web-enabled formats.
- Demonstrates ability to communicate complex issues clearly in a concise and organized manner both verbally and non-verbally, with strong grammar skills.
- Demonstrates ability to develop structured research including, but not limited to, obtaining, evaluating, organizing, and maintaining information within security and data protocols.



Job Title: Sensor Development Engineer	Department: Engineering
Reports to: Director of Engineering	Rev Date: 03-04-21

- Demonstrates ability to recognize nuances and resolve contradictions and inconsistencies in information.

V. Supervisory Responsibilities

- No Direct Reports

VI. Physical Demands & Work Environment

- Position requires sitting, standing, stooping, reaching, lifting/carrying typically less than 25 lbs., talking and walking; includes use of computers, printers, copiers and other office equipment primarily in an open cubicle, office environment
- May also include working with testing equipment and tools with occasional exposure to elements such as odor, noise, dust, heat, cold and/or chemicals in a manufacturing/production environment, machine shop and test labs
- Nature of work requires depth perception, close and far vision, normal color distinction, corrected normal vision, potential for eyestrain and normal finger dexterity.
- Must be capable and willing to adhere to safety requirements
- Minor regional or domestic travel may be required.

Disclaimer: This Job Description is not intended to be all-inclusive and may be subject to change to include new responsibilities and tasks or change existing ones as management deems necessary to meet the ongoing needs of the company.