

NOVASENTIS Inc.

POSITION DESCRIPTION: Physicist based modeling and Data Analysis Scientist

About Novasentis

Novasentis is the leading supplier of the world's thinnest and most flexible polymer-based haptic actuators. The patented electro-mechanical polymer (EMP) technology and products are ideal for creating rich haptic feedback and a completely new user experience for smart watches, AR/VR, gaming controllers, and similar human interface applications. Founded in 2006 to commercialize this unique EMP technology, Novasentis was restructured in 2015 to focus on these markets. It is privately held and headquartered in Berkeley, California with research facilities State College, PA.; and partner facilities in Europe. More information on Novasentis is available at www.novasentis.com

Position Description

In this data analysis and modeling position, you will develop multi-physics based models (combining electrical and mechanical behaviors) for Novasentis electroactive polymer (i.e. piezoelectric). Novasentis has developed a variety of test systems to probe actuator performance, which you will leverage to probe important parameters (equivalent electrical circuits, mechanical performance, etc.) and analyze the data to validate your models. From the data analysis you will be able to determine various physical properties of our actuator. Characterizing failure analysis through voltage/current/temperature/force and designing tests to predict failure would improve product performance. Using algorithms and design parameters accessible through COMSOL, you will optimize chosen parameters and autonomously converge on a subset of design values that create optimal outcome for the chosen characteristics under study. You will be comfortable collecting data, analyzing it and presenting summarized results and recommendations to the team. The ideal candidate will be proficient with data analysis tools (Matlab, e.g.) and data acquisition (NI DAQ) systems.

Essential Job Functions

Includes the following essential duties and responsibilities (other duties may also be assigned):

- Deep understanding of the physics of electromechanical systems, such as piezoelectric equations of state
- Algorithm development: Multivariate signal processing, statistical regression analysis, neural networks, machine learning, graph theory
- Physics based modeling
- Experience in performing lab scale experimental work, data analysis and linking back to fundamental physics
- Closely work with internal and external customers
- Devise innovative techniques for testing and characterizing actuators
- Experimental design, sensor fielding, scientific writing

Job Qualifications

- B.S. or Masters acceptable; Ph.D. engineering degree a plus
- 5+ years of experience working as an Engineer
- Technical experience with collecting data and using software to analyze how it relates to multi-physics models
- Working knowledge of realizing solutions from abstract ideas
- Excellent team work and people skill across departments for development and/or marketing efforts
- Solid communication skills, both verbal and written
- Matlab (nice to know COMSOL)
- Experience working with electro-mechanical systems a plus (MEMS, sensors, actuators, piezoelectrics)
- Hands on experience putting systems together, collecting data

Ways to stand out from the crowd

- A Ph.D. or MS in Mechanical Engineering or equivalent
- Experience related to haptic design, components, and use cases
- Experience in use of Haptic in AR, VR or wearables
- Working knowledge of Matlab and COMSOL or other multi-physics packages
- Software development experience beneficial (C++, for example)
- MATLAB, Python, TensorFlow, Keras, ENVI/IDL, Visual Basic, JAVA, Processing/Wiring, Arduino, Raspberry Pi
- LaTeX, Linux, Windows, Mac OS