

Battery Scientist**Titan Advanced Energy Solutions, Inc., Salem, MA**

Titan Advanced Energy Solutions, headquartered in Salem, MA, develops revolutionary, ultrasound-based battery cell inspection systems. Using non-destructive, high-resolution, high-speed ultrasound technology, Titan's IonSight analyzes cell morphology to detect critical manufacturing anomalies, directly addressing safety concerns and in-field risks. The novel in-line technology integrates into existing cell manufacturing processes to decrease the cost of quality, accurately classify cell quality grades, and evaluate lifetime performance and safety characteristics.

Titan's innovative strides have been recognized with numerous awards and funding from top clean energy programs and institutions, including Greentown Labs, the Massachusetts Clean Energy Center (MassCEC) and the Department of Energy. Growing and poised to continue this positive momentum, this is an exciting time to join the Titan team!

We are looking for a Battery Scientist with experience in signal processing. The ideal candidate can think broadly, has scientific curiosity, good communication skills, and is not afraid to challenge existing solutions. This position reports to the Head of Battery Ultrasound R&D.

Duties and Responsibilities:

- Design cell performance and feasibility testing to evaluate cell characteristics i.e. cell capacity, cycle life, post-mortem and cell failure analysis, rate capabilities, internal resistance, and safety.
- Conduct post-mortem and cell failure analysis via teardowns, SEM, and other methods to determine a cell's mechanical and morphological properties. Perform trade studies to understand experiment design trade-offs and make performance estimates to set design expectations.
- Lead the design and oversee the construction of battery cell/ultrasound test systems and characterization efforts. Guide the technical scope definition from product inception through commercial launch, including VOC and user experience.
- Collaborate closely with multidisciplinary teams and guide product designs with cross-functional input from Product management, Mechanical Engineering, Electrical Engineering, and Algorithm teams.
- Perform data analysis to quantitatively evaluate the cell performance in conjunction with ultrasound signal quality. Stay up to date on battery development in general and the growing field of battery-ultrasound sensing technology.
- Lead technical research, feasibility and discussions of new technologies together with internal and/or external teams in alignment with the company product roadmap.
- Identify and scope projects around technical innovation opportunities as well as technology risks. Contribute to the development of intellectual property.

Education/Qualifications

- BS in an engineering field (chemical, mechanical, electrical, or similar) with 4+ years of battery-related work experience, MS with 3+ years of battery-related work experience, or Ph.D.
- In-depth knowledge of lithium-ion battery chemistries, *pouch* and *prismatic* cell construction, battery manufacturing techniques, cycling and testing procedures.
- Very comfortable in a battery lab environment. Adept at using battery cyclers, tearing down batteries in a glove box, and creating pouch test cells (5 Ah or greater).
- Knowledge of signal processing is helpful. The ideal candidate would have knowledge of acoustic wave propagation through layered media, and experience with acoustic laboratory equipment such as oscilloscope, function generator, etc. and acoustic measurements.
- Broad knowledge across mechanical, electrical, software engineering, as part of combined HW/SW system.
- Working knowledge of MATLAB, Python, or similar scripting programming languages.

Required Soft Skills:

- Ability to take a broad assignment and define a first-class solution
- Ability to demonstrate critical thinking and thought leadership
- Ability to clearly and concisely communicate complex concepts
- A desire to thrive in a start-up environment
- Ability to adapt to change and act with urgency
- Results-oriented, highly motivated, and comfortable in situations that lack clear solutions

Personal Values:

- Passion, curiosity, and strong interpersonal skills
- Compassionate and highly empathetic
- Trustworthy & full of integrity
- Bias towards action and entrepreneurial spirit
- Collaborative and capable of building consensus internally and externally
- Continued learning mindset

To apply please see our Careers page at www.titanaes.com/careers

Learn more at www.titanaes.com

Titan welcomes applicants from every background – our diversity helps us thrive and serve our customers and each other. All employment decisions are based on qualifications, merit and business needs, without discrimination or bias. We are proud to be an equal opportunity employer. If you need assistance or an accommodation due to a disability, please let us know.