Ridgetop Group, Inc.
3580 W Ina Road Ste 200
Tucson, AZ 85741
www.RidgetopGroup.com

Phone: (520) 742-3300
Email: jobs@ridgetopgroup.com

Job Description: Battery Simulation Engineer

Position Overview

As a Battery Simulation Engineer at Ridgetop Group, you will be at the forefront of revolutionizing battery technology for critical applications. In this role, you will make a significant impact on the design and development of cutting-edge Battery Management Systems (BMS) technology, create innovative battery diagnostics, and develop advanced simulation models and prognostics algorithms for embedded applications. Your expertise will be pivotal in optimizing the performance of groundbreaking battery cell and pack designs. As a key member of our team, you'll be involved in all stages of the product development lifecycle, collaborating with cross-functional teams to contribute to the development of a new class of battery systems involving algorithms, architectures, and products. If you are a skilled professional with a passion for shaping the future of battery technology, we invite you to join us in this exciting journey.

Responsibilities

- Support product development and commercialization of Ridgetop Group's collection of battery health modeling, simulation, and analysis software tools
- Support the design and development of physics-based, data driven, and hybrid modeling of lithium-ion batteries under extreme operating conditions
- Involvement in developing robust battery models to predict cell behavior including but not necessarily limited to rate performance, life degradation, calendar aging, electrochemical and thermal response, and safety related behavior
- Formulate and execute designs of experiments to acquire sufficient data to train, validate, and test the battery models
- Work on battery estimation algorithms and models regarding SOC, SOH, impedance, and performance limitation under given operating conditions
- Work with cross-functional teams to develop, implement, test and maintain battery models for customer applications
- Generate lab and testing reports related to model and algorithm development
- Collaborate with battery team to determine and achieve battery performance and lifetime targets

Qualifications and Requirements

- Master's degree or higher in Electrical Engineering, Chemical Engineering, or Computer Science with 2-5 years of industry experience in a related field
- Strong knowledge of the functionality, chemics and development of lithium-ion batteries and battery cells
- Hands-on experience with battery testing equipment, procedures, and standard lab equipment such as oscilloscopes, multimeters, and power supplies
- Experience in system modeling and optimization, preferably using MATLAB
- Strong software development skills and GUI design with programming languages such as C/C++, JAVA, Python, MATLAB, SIMULINK, LabView, etc.
- High level of self-motivation and commitment to continuous improvement
- Strong communication skills, both written and verbal
- Fundamental knowledge of lithium-ion cell electro-chemistries and mechanisms
- Experienced in creating multi-physics based and data driven based models for

electrochemical/thermal/mechanical systems

Additional Preferred Experience and Skills

- Statistical estimation, filtering, pattern recognition, classification, prediction
- Fault detection and diagnosis methods
- System diagnostics and prognostic expertise
- Reliability analysis
- Experience in power systems and electrical engineering systems
- Experience in model and algorithm development applied in battery management system
- Good mathematical knowledge and experience in statistical analysis, optimization, machine learning, and deep learning tools

Position Type / Expected Hours of Work

This Full-Time Employment opportunity is expected to maintain 40 hours per week during regular business hours from 8 AM – 5 PM.

Benefits

For Full-Time Employees the Company offers a competitive salary and comprehensive benefits program, including but not limited to the following:

- Retirement + Employer match
- Medical / Dental / Vision insurance at competitive rates
- Supplemental life insurance
- Paid Holidays, Vacation, & Personal Time Accrual
- Employee Stock Options Program
- Tuition Reimbursement Program

Salary Range

Compensation is DOE.

Job Location

Corporate Headquarters, Tucson, Arizona.