Cell Simulation Engineer

As a Cell Simulation Engineer specializing in Lithium Iron Phosphate (LFP) battery cells, you will play a crucial role in advancing our understanding of battery performance through computational modeling and simulation. You will work closely with a multidisciplinary team of battery scientists, engineers, and researchers to develop accurate and predictive models that enhance the design, optimization, and performance of LFP battery cells.

Responsibilities:

➢ Design and develop physics-based and empirical computational models to simulate the electrochemical behavior, thermal characteristics, and aging mechanisms of LFP battery cells.
➢ Validate simulation results by comparing them with experimental data and refine models through calibration to ensure accuracy and reliability.
➢ Utilize simulation tools to optimize the design and composition of LFP battery cells for specific applications, considering factors such as energy density, power density, cycle life, and safety.
➢ Conduct predictive analysis to anticipate the performance and degradation of LFP battery cells under different operating conditions, including temperature variations, charge-discharge cycles, and load profiles.
➢ Collaborate with experimentalists, materials scientists, and process engineers to integrate simulation results into the design and development process of LFP battery cells, contributing to the improvement of cell performance and reliability.
➢ Document simulation methodologies, results, and insights in technical reports and presentations, and effectively communicate findings to cross-functional teams and stakeholders.
➢ Stay abreast of the latest advancements in battery modeling techniques, software tools, and industry trends, and incorporate relevant methodologies into simulation workflows.

Requirements:

➢ A Bachelor's, Master's, or Ph.D. degree in Mechanical Engineering, Chemical Engineering, Electrical Engineering, Materials Science, or a related field with a focus on battery systems or computational modeling.
➢ Previous experience in developing and using computational models for battery systems, particularly LFP battery cells, is highly desirable. Experience with software tools such as COMSOL, ANSYS Fluent, MATLAB, or similar for simulation and analysis is preferred.
➢ Strong understanding of electrochemistry, thermodynamics, and transport phenomena in battery systems.
➢ Proficiency in programming languages such as Python, MATLAB, or C/C++ for model development and data analysis.
➢ Familiarity with battery characterization techniques and experimental data analysis.
➢ Effective communication skills for presenting complex technical concepts and collaborating with

interdisciplinary teams.

- ➢ **Attention to Detail:** Meticulous attention to detail and a commitment to producing high-quality simulation results and analysis.
- ➢ **Passion for Renewable Energy:** A passion for renewable energy technologies and a desire to contribute to the advancement of sustainable energy storage solutions.

Benefits:

- ✓ Competitive salary and benefits package.
- ✓ Opportunities for professional development and career growth.
- ✓ Work in a collaborative and innovative environment at the forefront of battery research and development.
- ✓ Contribute to the development of clean energy technologies with real-world applications.