Date: **February 2024**
Role: **Powder Process Engineer**
Reports to: **Director of Process Development & Facilities**

The Company: Located in Pittsburgh, Pennsylvania, Stratus Materials is an early-stage, technology-based company focused on the development and manufacture of advanced active materials for the lithium-ion battery industry. Our primary focus is on advanced electric vehicle batteries, but our materials will also be applicable and very attractive for virtually all other end-user applications using lithium-ion batteries. In early 2022, the company secured a substantial Series A round of financing from two blue-chip venture capital firms and is using those funds to execute on its business plans. If you are interested in a dynamic, high-growth opportunity where you can dig in and make a difference, we look forward to meeting you.

Summary of Position: The Powder Process Engineer position will be instrumental in the design, build, measurement, and improvement of the various production processes within our pilot and full-scale production lines. This role is a combination of chemical process engineering and quality engineering that is designed to ensure that we stand up and operate materials processing systems that will perform at high levels of quality and consistency. This role will work closely with material scientists, data scientists, operations personnel, test engineers, and other process engineering and quality personnel to produce world class energy storage materials.

Responsibilities:

- Evaluating and selecting chemicals, catalysts, solvents, reagents, and other materials based on their physical, chemical, and other properties. Including acid processing, digestion, and neutralization.
- Designing, monitoring, validating, and maintaining equipment such as reactors, mixers, furnaces, heat exchangers, dryers, separators, pumps, compressors, and evaporators to ensure they are working properly.
- Qualify and commission moderate to large scale chemical and mixing processes, equipment, and instrumentation. Performing calculations using scientific principles such as mass and energy balances, fluid dynamics, thermodynamics, electrochemistry, and organometallic chemistry to design chemical processes.
- Conducting feasibility studies, designing processes, conducting experiments, collecting data, analyzing results, drawing conclusions, and reporting findings to project stakeholders.
- Preparing process flow diagrams, equipment layouts, material specifications, operating procedures, and other documentation needed to design, construct, operate, and maintain chemical processes.

- As part of a team, designing and implementing the initial Quality systems on the lines including incoming inspection, in-line process monitoring, end-of-line testing and conformity, comprehensive data collection and analysis, and corrective action procedures
- Demonstrate safety leadership particularly with chemical operations (gas generation, pressure vessels, exothermic reactions, corrosive materials, etc.) in both day-to-day activities and by incorporation in process /equipment designs.
- Lead or participate in safety reviews such as HAZOP which includes providing technical assistance with combustion issues, cross contamination of chemicals, etc. Assist as necessary in implementing environmental improvement initiatives particularly with respect to VOC emissions, pollutants identification, effluent control, neutralization of caustics, etc.

Requirements – Education, Experience, and Skills:

- 3 – 5+ years' experience in Chemical Process Engineering for materials processing industries, at both pilot and large scale. Experience designing and starting up operations is a plus.
- Bachelor's or Advanced degree in Chemical Engineering (or similar science and engineering field).
- Strong technical and analytical skills with the ability to solve complex problems and to provide innovative solutions in a rapidly changing environment.
- Interest and experience in chemical process scale up, and communication between Manufacturing, Pilot, and Research teams to effectively produce data-driven decisions.
- Technical understanding of mixing, drying, or other processes for powder productions, solid/liquid reactors, and high temperature kilns (300-1600C).
- Experience in the design, specification and commissioning of large-scale automated chemical processing equipment, piping, and control/instrument systems.
- Fluent in Quality with requisite experience, expertise, education, and certifications
- Familiarity with application of DOE, SPC and Six Sigma, FMEA tools for problem solving, process definition and improvements.
- Good verbal, written, computer and organizational skills.
- Ability to handle multiple, competing priorities in a continuously changing environment.
- Highly conscious of safety and EHS.
- Experience with start-up or early-stage companies is a plus.

Additional Preferences:

- Experience working with metal oxides, powders, battery active materials, and familiarity with battery performance behavior and metrics reflecting material quality.
- Experience with international process scale-up and working on cross-national teams.
- Familiarity with lean manufacturing; 5S and/or Six Sigma desirable.

Requirements – Geographic and Physical:

- Located in Pittsburgh, PA
- Able to frequently move about an office and factory floor.
- Occasional light lifting and ascending/descending stairs.
- Travel requirement: Occasional domestic and international travel to suppliers and manufacture plant

Along with an exceptional culture and an opportunity to make a global difference, Stratus Materials offers a competitive compensation and benefits package as well as an entrepreneurial environment and the opportunity for phenomenal professional growth and development. Founded in early 2022 by a team including Dr. Jay Whitacre of Carnegie Mellon University, the company is an Equal Opportunity Employer.