Alta Resource Technologies, Inc.

Senior Engineer – Metallurgical Engineering

Location: Boulder, CO
Reports To: VP of Engineering and Operations

About Us

Alta is reinventing how the world sources critical minerals — using protein-based chemistry to extract rare earth elements and other essential materials from challenging feedstocks with unmatched selectivity. By dramatically reducing the cost and environmental impact of mineral separation, Alta is making it possible to unlock new sources of supply for 21st-century technologies. As global demand accelerates, securing these materials has become one of the most urgent challenges facing U.S. competitiveness and national security. Backed by top investors and government partners, Alta is growing fast and hiring mission-driven scientists and engineers to help us scale our platform and transform the future of mining.

Role Summary

Alta is seeking a **Senior Engineer – Metallurgical Engineering** to own and advance metallurgical process development across laboratory, pilot, and commercial scales. The ideal candidate will design, optimize, and scale metallurgical unit operations including leaching, precipitation, impurity removal, roasting and calcination for rare earth elements from ores and concentrates. They will work cross-functionally with the R&D and Engineering/Operations teams to improve yield, purity, robustness and to provide Subject Matter Expertise in the development of Alta's end-to-end flowsheets.

A successful candidate will:

- Develop flowsheets for commercial scale plants
- Lead and support the development and commercialization of metallurgical unit operations that are quantitatively understood, scalable, and integrated with Alta's separation platform
- Process development efforts to demonstrate improvements in recovery, purity, and process robustness driven by data and experimentation
- Work with external subject matters experts, as needed, to augment internal capabilities and to accelerate commercial timelines

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Key Responsibilities

Technical Leadership & Process Design

- Provide Metallurgical Engineering Subject Matter Expertise to various functions of the company
- Lead the design and optimization of metallurgical flowsheets for REE-bearing ores, concentrates, and intermediate streams
- Own unit operations including but not limited to leaching, selective precipitation, impurity removal, and calcination
- Translate bench-scale chemistry into pilot and commercial-scale process designs, including operating envelopes, equipment sizing, and integration with upstream and downstream systems
- Identify technical risks related to scale-up, impurity control, reagent consumption, and solids handling, and develop mitigation strategies.
- Be equally comfortable working at lab, pilot, demo, and commercial scales, and working in silico as part of planning and analysis. Serve as a "player-coach" who leads by example.

Quantitative Analysis & Modeling

- Develop and maintain mass balance models across hydrometallurgical processes
- Quantitatively track yield, recovery, purity, and losses at each unit operation
- Use data to drive design decisions, trade studies, and process optimization efforts
- Support techno-economic analysis (TEA) inputs related to hydromet processing, including reagent costs, throughput limits, and waste streams
- Develop process simulation models

Experimental Design & Data Integration

- Design statistically sound experiments to improve yield and product purity
- Partner closely with Process Engineering and Analytical Chemistry teams to define sampling plans, analytical methods, and data quality requirements
- Interpret analytical data (ICP-OES/MS, solids analysis, moisture, LOI, phase changes, particle size distribution, etc.) to inform process improvements
- Ensure experimental results are scalable, reproducible, and well-documented

Scale-Up & Deployment

- Support pilot and demonstration plant design, commissioning, and operation
- Define operating procedures, control strategies, and performance metrics for hydrometallurgical systems
- Contribute to commercial system design by translating pilot learnings into robust processes
- Work with external partners, vendors, and test facilities as needed

Cross-Functional Collaboration

- Collaborate with Biology, Chemistry, and Engineering teams to ensure hydrometallurgy operations align with overall system performance goals
- Provide technical mentorship and review for junior engineers and scientists without formal people-management responsibility
- Clearly communicate technical findings, risks, and recommendations to leadership and project stakeholders

Required Qualifications

- Bachelor's or Master's in Metallurgical Engineering, Chemical Engineering or related fields
- At least 8 years of experience in a similar position in an Engineering, Technology or Operating company. Lower years of experience will be considered for PhD holders
- Hands-on experience in Hydrometallurgy and Pyrometallurgy
- Demonstrated design and operational expertise in relevant unit operations including but not limited to physical disruption (e.g., grinding, milling), flotation, leaching, roasting, precipitation, and calcination
- Strong quantitative skills, including mass balances, data analysis, and experimental design
- Ability to operate effectively in a fast-paced, R&D-driven environment

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Preferred Qualifications

- Direct experience with REE ores, concentrates, or recycled feedstocks
- Proven ability to design and scale chemical processes from lab to pilot and toward commercial operation
- Familiarity with solid–liquid column separation, filtration, and solids handling challenges
- Experience contributing to TEA or process economics
- Knowledge of Industrial scale chromatography separation is an asset
- Working knowledge of scaling-up from R&D to Commercialization is an asset

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Compensation & Benefits

The starting pay range for this position is [$145,000 - $200,00], commensurate with educational background and work experience.

Benefits include:

- 401(K)
- Medical, Dental, Vision plans (or equivalent)
- Flexible Time Off
- Paid Parental Leave
- Paid Sick Leave
- Company Holidays

EOE

At Alta, we are committed to diversity and inclusion. As an equal opportunity employer, all qualified candidates will be considered for employment without regard to race, color, creed, religion, age, sex or gender (including pregnancy, childbirth, lactation and related medical conditions), gender identity or gender expression, sexual orientation, marital status, national origin, ancestry, citizenship status, military service or veteran status, physical or mental disability, or any other legally protected characteristic. Alta participates in e-Verify for all positions.

If you have a disability or special need that requires accommodation at any point in the hiring process, please let your recruiter know.

How to Apply

To apply, please email your resume and a cover letter (see below) to **talent@altatech.io**.
Include your name and the job title in the subject line (i.e., [Your Name] – [Job Title]).

All applications **must include** a one-page cover letter. The cover letter should clearly state your interest in the position and our company, outline 2–3 specific technical skills or accomplishments relevant to the role, and demonstrate how your experience aligns with our mission and technology platform. We expect concrete examples that illustrate measurable impact and collaborative problem-solving in technology development. Applications submitted without a cover letter will not be considered.