

Rare Earth Elements Core Tech Director

WHO WE ARE

Demand for critical minerals to power the energy transition is growing exponentially. Yet, we know mining deeper and broader, and building landfills higher and wider, works against our fight to save the planet. At Nth Cycle, we see the path forward. We believe the critical minerals needed for the energy transition are already in circulation today. We just didn't have a clean, profitable way of retrieving them, until now.

Nth Cycle is a metal processing technology company. Our electro-extraction technology helps recyclers and miners capture more critical minerals—for use in lithium-ion battery manufacturing, among other things—while dramatically reducing costs and emissions. We are the heart of metals processing; we are the crucial step that profitably separates critical minerals from other elements, transforming them into production-grade feedstocks for the energy transition.

OUR CULTURE

You won't find another team like ours. We believe in open, honest communication, and enjoying our work while changing the world. And we value the perspectives and opinions of our colleagues while pushing each other to excel.

We're a dynamic team looking for a new team member who's also passionate about addressing climate change and advancing the clean energy industry. Consistent with our commitment to diversity & inclusion, we value colleagues with the ability to work on diverse teams and with a diverse range of people.

If this is you, keep reading.

JOB OVERVIEW

We are seeking an experienced and innovative Rare Earth Elements Core Tech Director to lead the research, development, and optimization of next-generation electrolytic cell technologies for rare earth elements deposition. This role will focus on advancing cell materials, electrochemical systems, electrolyte chemistry, and electrodeposition performance to support pilot and commercial-scale deployment.

The ideal candidate combines strong expertise in electrochemistry, hydrometallurgy, and materials science with demonstrated leadership in developing and scaling industrial electrolytic processes. The position requires a hands-on technical leader capable of driving innovation while managing multidisciplinary R&D programs and teams.

KEY RESPONSIBILITIES

Research & Technology Development

- Lead R&D programs focused on electrolytic cell design and electrochemical process development for Rare Earth Elements deposition.
- Investigate and optimize cell chemistry, electrolyte composition, additives, operating parameters, and electrochemical performance.
- Research and evaluate cell construction materials, including electrode materials, membranes, coatings, separators, and corrosion-resistant components.
- Develop innovative approaches to improve current efficiency, deposition quality, metal recovery, selectivity, and energy consumption.
- Advance understanding of electrodeposition mechanisms, nucleation, growth behavior, and impurity impacts within electrolytic systems.

Cell Materials & Electrochemistry

- Lead studies on anode and cathode materials, surface engineering, passivation, corrosion resistance, and lifecycle performance.
- Evaluate and optimize electrode geometry, current distribution, electrolyte flow, and mass transfer characteristics.
- Design and oversee electrochemical testing programs including:
 - Cyclic voltammetry
 - Polarization studies
 - Electrochemical impedance spectroscopy (EIS)
 - Deposition characterization and performance analysis
- Support development of novel materials and advanced electrolytic cell architectures for critical mineral recovery.

Leadership & Program Management

- Manage and mentor R&D scientists, engineers, and laboratory personnel.
- Define R&D roadmaps, technical priorities, and experimental programs aligned with business strategy.
- Manage project budgets, timelines, and resource allocation.
- Prepare technical reports, presentations, patent disclosures, and technology documentation.
- Collaborate with external research institutions, suppliers, and strategic partners when applicable.

REQUIRED QUALIFICATIONS

Education

Bachelor's degree in Chemical Engineering, Metallurgical Engineering, Materials Science, Electrochemical Engineering, or related discipline; Master's or PhD preferred.

To apply, contact careers@nthcycle.com

15 Blue Sky Drive
Burlington, MA. 01803
nthcycle.com

Experience

Minimum 10–15 years of industrial or applied R&D experience in electrolytic systems, hydrometallurgy, or electrochemical process development.

Technical Skills

- Demonstrated expertise in electrodeposition, electrowinning, electrorefining, or electrochemical materials development.

Strong technical background in:

- Electrochemistry
- Electrolyte chemistry
- Corrosion and materials science
- Mass transfer and transport phenomena
- Industrial electrochemical systems

SALARY RANGE

\$180,000 - \$220,000

LOCATION

Burlington, Massachusetts