

Chemical Engineer

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

As a Chemical Engineer, you'll design, execute, and analyze experiments for electrochemical systems used in metal recovery and battery recycling. This role will be focused on electroextraction of copper from recycled feedstocks. This role sits at the intersection of lab testing, process development, and scale-up, supporting Nth Cycle's core technology designs and integration into commercial processes. We are looking for someone who can drive data-driven scale-up of electrochemical technology.

KEY RESPONSIBILITIES

Electrochemical Testing & Experimentation

- Design and run experiments involving copper electroextraction cells (bench to pilot to commercial scale).
- Operate and troubleshoot test equipment including such components as process sensors, pumps, valves, signal wiring, PLCs, and power supplies.

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- Evaluate reaction kinetics, efficiency, and system stability.
- Prepare chemicals and electrolytes for use through safe laboratory techniques and best practices.
- Align electrochemical characterization with materials characterization to inform cell component decision-making.
- Perform techniques like cyclic voltammetry, chronoamperometry, electrochemical impedance spectroscopy (EIS).
- Work alongside an Electrochemical Engineer to translate results from R&D electrochemical tests to support and optimize cell and process scale-up.

Data Analysis & Reporting

- Analyze electrochemical data and extract meaningful performance metrics.
- Develop models to understand system behavior and optimize performance.
- Document findings in technical reports and present to cross-functional teams.

Process and Design Development

- Support scaling from lab experiments to pilot and commercial-scale systems.
- Optimize operating parameters such as current density, voltage, electrolyte composition, and temperature.
- Collaborate with process and mechanical engineers on system improvements.

Equipment & Lab Management

- Set up, calibrate, and maintain electrochemical test equipment
- Troubleshoot instrumentation and experimental setups
- Ensure lab safety and compliance with protocols

Cross-Functional Collaboration

- Work closely with materials scientists, electrochemical engineers, and operations teams
- Support technology transfer from R&D to manufacturing

REQUIRED QUALIFICATIONS

Education

Bachelor's, Master's, or PhD in Chemical Engineering, Electrochemistry, or Materials Science.

Experience

4-8 years of hands-on experience in:

- Electrochemical testing, electrowinning, or battery systems
- Scale-up of electrochemical cells and application of standard characterization techniques across scales
- Experimental design and execution
- Data analysis (Python, MATLAB, or similar tools)

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Familiarity with:

- Potentiostats/galvanostats
- Electrochemical techniques (CV, EIS, etc.)
- Handling aqueous or non-aqueous chemicals

PREFERRED QUALIFICATIONS**Experience with:**

- Battery recycling or hydrometallurgy
- Metal extraction or plating processes

Familiarity with:

- Process control systems
- Automation or data acquisition systems

KEY SKILLS

- Strong analytical and problem-solving ability
- Hands-on experimental mindset
- Ability to interpret complex data and translate into actionable insights
- Clear technical communication

SALARY RANGE

\$110,000 - \$160,000

LOCATION

Burlington, Massachusetts