

Electrochemical 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 an Electrochemical 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. You will sit 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 and guide analytical electrochemical testing and be a resource for electrochemistry principles.

KEY RESPONSIBILITIES

Electrochemical Testing & Experimentation

- Design and run experiments involving copper electroextraction cells (bench to pilot to commercial scale)

- Perform techniques like cyclic voltammetry, chronoamperometry, electrochemical impedance spectroscopy (EIS)
- Utilize electrochemical experiments to determine quantities such as the electrochemically active surface area, diffusion layer thickness, corrosion rate, limiting current density, etc. and their impact on copper product morphology
- 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
- Work alongside a Chemical 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, chemical 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, Materials Science

Experience

5-10 years of hands-on experience in:

- Electrochemical testing, electrowinning, or battery systems
- Application of the fundamentals of electrochemistry toward the creation of new test methods

To apply, contact careers@nthcycle.com

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nthcycle.com

- Lab-scale experimental design and execution
- Data analysis (Python, MATLAB, or similar tools)

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
- Scale-up from lab to pilot/commercial-scale systems

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 - \$170,000

LOCATION

Burlington, Massachusetts