GINA CODY SCHOOL OF ENGINEERING AND COMPUTER SCIENCE

THE DEPARTMENT OF CHEMICAL AND MATERIALS ENGINEERING

FUNDED PHD POSITION IN CHEMICAL AND MATERIALS ENGINEERING

ORGANIC FLOW BATTERIES FOR RENEWABLE ENERGY

organic flow batteries, redox flow batteries, electrochemical energy storage, renewable energy storage, organic redox molecules, electrolyte design, electrochemistry, battery performance and degradation, analytical chemistry, energy materials, grid-scale batteries, sustainable energy technologies, applied battery research

Supervisor: **Professor Marc-Antoni Goulet**
Department: **Chemical and Materials Engineering, Gina Cody School of Engineering and Computer Science**
University: **Concordia University, Montreal, Canada**
Start Date: **Summer 2026 (May), Fall 2026 (September)**

PROJECT OVERVIEW

The Sustainable Electrochemical Technologies (SET) Lab in Montreal, Canada has an open position for a highly motivated individual to help us create the next generation of grid storage batteries to accelerate the global renewable energy transition. Cost-effective energy storage is now the bottleneck for producing most of the world's energy needs from wind and solar power, and we need your help to overcome this final challenge.

ROLE DESCRIPTION

- Design and evaluate novel redox-active organic molecules and coordination compounds for flow battery electrolytes.
- Perform electrochemical testing to assess battery performance, efficiency, stability, and lifetime.
- Investigate electrolyte degradation and molecular decomposition using analytical chemistry techniques.
- Develop and apply battery testing protocols, from standard methods to advanced characterization approaches.
- Collaborate with synthetic chemistry research groups and contribute to interdisciplinary project workflows.
- Participate in industry-linked research activities, including potential industrial internships.
- Contribute to publications and, where relevant, engage in related electrochemical projects (e.g., electrosynthesis, CO_2 reduction).

REQUIREMENTS

- Bachelor's and Master's degree in Chemistry, Chemical Engineering, Materials Science/Engineering, Physics, or Electrical Engineering.
- Demonstrated experimental research experience in one or more of the following:
  - Electrochemical systems or batteries
  - Organic synthesis
  - Analytical chemistry
- Strong ability to work independently while contributing effectively within a collaborative research team.
- Excellent analytical, problem-solving, organizational, and communication skills.
- Motivation to pursue research at the intersection of energy storage and renewable energy technologies.
- Prior battery experience is not required; training will be provided.

HOW TO APPLY

Please complete **the application form**. All direct emails to the professor will not be considered.

Deadline: February 1, 2026
For all questions, please contact Alisa Makusheva at alisa.makusheva@concordia.ca