University of Toronto
Faculty of Applied Science and Engineering
Mechanical and Industrial Engineering

**Posting: June 9, 2022**

**Postdoctoral fellowship position at the University of Toronto in accelerating CO2 electrocatalysis via high-throughput system testing**

**Area of Research:** The carbon dioxide ($CO_2$) reduction reaction ($CO_2RR$) converts $CO_2$ into fuels and chemical feedstocks and can be powered by renewable electricity. It is a promising route to close the carbon cycle. Efficient electrocatalysts and systems play a vital role in realizing this goal. However, testing of materials under representative conditions is currently a bottleneck. The Sinton group at the University of Toronto seek an exceptional PDF to contribute to collaborative projects in the reduction of $CO_2$ and CO to valued products methane, ethanol, and ethylene, paired with oxidation reactions and systems that upgrade conventional testing systems by means of parallelization and automation. This position is part of the A3MD consortium – the **Alliance for AI-Accelerated Materials Discovery**. A high-throughput testing system for $CO_2RR$ would greatly advance the field and provide comprehensive datasets that can—via AI—further accelerate catalyst discovery and system development.

**Description of Duties:** The principal goals of the PDF will be to improve high-throughput testing capabilities and to publish first-author publications in high-impact journals. The PDF will devote a fraction of their time to co-mentoring graduate students in the group.

**Required Qualifications:**

- PhD in a relevant field
- Ability to work independently, and collaboratively as part of a team
- Sound organizational and communication skills, including the capacity to offer thoughtful and clear technical guidance
- Proven expertise in one of the following domains:
  - Electrochemical systems, fuel cell systems, electrolyzer systems
  - Electrochemistry, electrocatalysis
  - Chemical process engineering and process chemistry
  - The $CO_2$ reduction reaction and/or the CO reduction reaction
  - Mechatronic system design
  - Instrumentation and instrumentation integration
  - Robotics and automation
  - Control systems

**Salary:** The salary will be $60,000/year.

**Expect Start date**: August 1, 2022

**Schedule**: 100%FTE

**Appointment:** Term (12 months) with a possible renewal

**How to Apply:**

- The application package should include:
    1. A cover letter describing your interest and qualifications
    2. Your CV
    3. Contact information for 2 references from current or previous supervisors/employers
    4. Two relevant publications authored by the candidate
- Combine items 1-4 above into a single PDF file, named:
  "Givenname-Familyname-HT_CO2RR_PDF_Application-YYYY-MM-DD.pdf"
- Email your application to Dr. Jason Riordon (jason.riordon@utoronto.ca), with the subject line, "HT CO2RR PDF Application".

**Posting Date: June 9, 2022**

**Closing Date: June 30, 2022**

*The normal hours of work are 40 hours per week for a full-time postdoctoral fellow (pro-rated for those holding a partial appointment) recognizing that the needs of the employee's research and training and the needs of the supervisor's research program may require flexibility in the performance of the employee's duties and hours of work.*

*Employment as a Postdoctoral Fellow at the University of Toronto is covered by the terms of the CUPE 3902 Unit 5 Collective Agreement. This job is posted in accordance with the CUPE 3902 Unit 5 Collective Agreement.*

*The University of Toronto is strongly committed to diversity within its community and especially welcomes applications from racialized persons / persons of colour, women, Indigenous / Aboriginal People of North America, persons with disabilities, LGBTQ persons, and others who may contribute to the further diversification of ideas.*