

Posting: August 22, 2022

## Postdoctoral Fellow

### Areas of Research:

This project focusses on experimental research of lithium-ion batteries, electric vehicles (EVs), battery thermal management, thermal-electrochemical battery characterization, and battery degradation.

### Description of Duties:

The University of Toronto (U of T)'s Advanced Thermofluids Optimization, Modelling and Simulation (ATOMS) Laboratory is looking for a postdoctoral fellow in the areas of batteries and EVs, with experience in experimental battery lab settings. The postdoctoral fellow will work on design, prototyping, and testing activities related to (i) thermal-electrochemical characterization of battery cells, modules, and packs, (ii) thermally safe fast-charging technologies, (iii) thermally enabled battery enhanced performance, and (iv) battery life extension through temperature-modulated battery degradation mechanisms.

The Postdoctoral Fellow will work under the supervision of Professor Cristina Amon and senior research associates in the ATOMS lab to conduct battery research and training activities, work collaboratively with industrial and academic partners, author scientific publications and conference talks, prepare progress reports and technical presentations, develop research proposals and funding applications, and help supervise students on a day-to-day basis. The candidate will be expected to work independently, provide leadership to an interdisciplinary team of graduate students, produce publishable results, and publish frequently.

This Postdoctoral Fellow position offers a unique opportunity to conduct battery and EV research in collaboration with a multidisciplinary team of academic researchers and engineers who are part of a broader university-industry initiative on electrification technologies at U of T Engineering.

### Requirements:

#### Education

- Doctoral (Ph.D., Sc.D.) degree in Mechanical Engineering, Electrical Engineering, Chemical Engineering, or related fields with a focus on experimental battery research, preferable on lithium-ion battery thermal transport phenomena (obtain within the past 5 years)

#### Experience/Skills

- Lab experience in EV battery research, battery testing equipment, and battery module/pack assembly is strongly required

- In-depth understanding of thermal transport phenomena and degradation mechanisms in EV battery systems
- Working knowledge of battery laboratory procedures, safety, and maintenance
- Strong technical and analytical skills with a solid understanding of experimental research methodologies, with an outstanding record of peer-reviewed publications
- Knowledge of computational modelling and simulation of lithium-ion batteries would be an asset
- Ability to identify research and collaboration opportunities with industry partners

#### Other Skills

- Well-developed interpersonal, communication and analytical skills
- Strong communication abilities in English (writing, conversational, presentation)
- Ability to work effectively in a diverse team
- Ability to mentor effectively students and to exercise tact and judgement in working with personnel under their supervision
- Demonstrated initiative and technical ability
- Detail-oriented
- Ability to work independently, with minimal supervision

**Salary:** \$60,000

**Expect start date:** October 17, 2022 (flexible)

**Schedule:** 100%FTE

**Appointment Type:** One-Year term with possible renewal

**To Apply:** Application package (to be emailed to ATOMS Lab at [atoms@mie.utoronto.ca](mailto:atoms@mie.utoronto.ca)) should include a one-page letter describing relevant research experience and motivation, CV (including a list of 3 professional references), and copies of selected journal papers the candidate considers most relevant.

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**Closing Date:** September 22, 2022

The normal hours of work are 40 hours per week for a full-time postdoctoral fellow recognizing that the needs of the employees' research and training and the needs of the supervisor's research program may require flexibility in the performance of the employees' 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 colours, women, Indigenous/Aboriginal, People of North America, persons with disabilities, LGBTQ persons, and others who may contribute the further diversification of ideas.