

## Post Doctoral Fellow – SEE GROUP

**(One year Term with possible renewal for one year)**

**Salary** \$45K / annum

**Faculty/Division:** Faculty of Applied Science & Engineering

**Department:** Materials Science and Engineering

**Campus:** St. George (downtown Toronto)

**Description:** The Surface Engineering and Electrochemistry (SEE) Group in the Department of Materials Science and Engineering invites applications for the position of Post Doctoral Fellow (Limited Term) in the field of materials synthesis and electrocatalysis. Our lab is focused on the development and synthesis of nanomaterials for use as electrocatalysts in water splitting reactions and to examine the role of surface chemistry and structure on their activity and stability. New directions in our laboratory include high energy surfactant assisted ball milling for nanopowder production, in situ measurements of electrocatalytic activity, and the design and component integration in advanced AEM water electrolyzers. We are a multi-disciplinary team of scientists and engineers who are passionate about developing technologies and approaches that will bring a paradigm shift to green hydrogen generation. The position will involve powder production, materials characterization using advanced electron and x-ray analytical techniques wet laboratory research, electrochemical testing, project management and lab operation oversight, grant writing, and reporting.

### Minimum Qualifications

The successful candidate will have a Ph.D. in a relevant scientific field (e.g. Materials Science, Chemical Engineering, Chemistry) and <5 years of postdoctoral experience. We are looking for a talented and enthusiastic researcher who is familiar with and has strong skill sets in the field of both materials science and electrochemistry, including:

- Design and formulation of alloy systems through mechanical alloying
- Familiar with glass forming ability and phase transformations in amorphous metals
- Fabrication and characterization of nanopowders
- Evaluation of electrochemical performance for HER and OER reactions
- Modelling of electrochemical reactions at surfaces

The candidate will also have excellent writing skills, with a strong publication record, including impactful work from field relevant journals, and be able to prepare manuscripts for submission to peer-reviewed journals. The candidate will be able to work independently, while also working well as part of a collaborative team on group projects. Experience providing direction to junior researchers will be an important asset.

**Education:** PhD in Materials Science, Chemical Engineering, Chemistry

**Skills and Experience:**

Working knowledge of but not limited to BioLogic and Ivium electrochemical equipment and a broad spectrum of electrochemical techniques including OCP, anodic polarization, Tafel measurements, CV, EIS, Chronoamperometry and Chronopotentiometry.

Working knowledge of, but not limited to analytic techniques of SEM, TEM/STEM, XRD, XPS, UPS

Working knowledge of, but not limited to analytical chemistry techniques of pH, Conductivity, solution chemistry, ICP-MS, ICP-AES

Manage day to day laboratory operations like safety compliance, procurement, etc.

Conduct data analysis and report findings in a clear manner.

Present research findings to Principal Investigators and other members of the research team, as well as at local, national and international conferences.

Work closely with and in collaboration with our industrial partner and their facility in designing, commissioning, and establishing working test facilities, developing test protocols, train staff, and other duties as required

Beyond these responsibilities, the individual will be expected to participate in the preparation of grant applications and research supervision of one or more students or other trainees. The candidate will be expected to perform research with a high degree of independence and will design, direct, execute, analyze and present in written and oral forms novel investigative studies that build on and/or take advantage of the resources and expertise within the lab as well as the candidate's academic expertise.

All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority.

**To Apply:**

**Please prepare the following documentation as you application package:** Prepare a cover letter, CV, 3 samples of research papers and contact information for at least two references. Email them all in a single e-mail with the subject line "Application for Post-Doctoral Fellowship to both Professor Steven Thorpe at [Steven.thorpe@utoronto.ca](mailto:Steven.thorpe@utoronto.ca) and Professor Donald Kirk at [don.kirk@utoronto.ca](mailto:don.kirk@utoronto.ca)

**Deadline:** Friday February 25, 2022.