



SIMON FRASER UNIVERSITY

## Fuel Cell Research Laboratory

*fcrel.ca*

Directed by Dr. Erik Kjeang

School of Mechatronic Systems Engineering, Vancouver, Canada

### **PhD Student Fellowship Opportunity: Polymer Electrolyte Membrane Fuel Cells**

There is a current opportunity for a 3-year PhD student fellowship at the Simon Fraser University Fuel Cell Research Laboratory in collaboration with local fuel cell industry partners to conduct research on polymer electrolyte membrane fuel cells (PEMFCs). The position is slated to start on January 3<sup>rd</sup>, 2023, or as soon as possible.

Responsibilities:

- Conduct theoretical/computational modeling of physical, electrochemical, and chemical processes in PEMFCs.
- In-house fabrication of membrane electrode assemblies for fuel cell testing.
- Carry out experiments related to PEMFC performance and durability using specialized diagnostic techniques including in-situ and in-operando visualization.
- Characterize PEMFC components using advanced spectroscopic and microscopic techniques coupled with physico-chemical methods, e.g., BET, MSP, DVS, DMA, etc., to understand the relation between structure, composition, and properties of components with performance/durability.
- Analyze, interpret, and summarize test data.
- Maintain up-to-date knowledge, critically analyze, and summarize related PEMFC materials, technology, and application literature.
- Work effectively within a research team of scientists and research engineers to accomplish technical objectives.
- Develop solutions for enhanced fuel cell durability and performance.

Requirements:

- Master's/Bachelor's degree in mechanical, materials, or chemical engineering, or a related discipline.
- Prior mechanistic/computational modeling and/or experimental R&D experience.
- Experience in transport phenomena, porous materials, electrochemistry, and/or polymer engineering.
- Strong interest and commitment in sustainable energy systems.
- Strong analytical skills.
- Strong hands-on capabilities and aptitudes.
- Good oral and written communication skills.
- Ability to work as part of a small team and as an individual researcher.

The PhD student will be supervised by Dr. Erik Kjeang, Canada Research Chair in Fuel Cell Science and Technology Development and Professor, Simon Fraser University. Interested applicants are advised to submit their CV and Statement of Interest to Dr. Erik Kjeang, Director, FCReL, care of Jean Leong: [apcfc@sfu.ca](mailto:apcfc@sfu.ca) by September 30<sup>th</sup>, 2022. Only short-listed candidates will be contacted.

This position is open to Canadian citizens, permanent residents, and international applicants; however, Canadian citizens and permanent residents will be given priority. Admission to the PhD program at Simon Fraser University is required (visit <https://www.sfu.ca/gradstudies/apply/choose-sfu.html> for further information). If you are not a Canadian citizen or a permanent resident of Canada, you will need to apply to Immigration, Refugee and Citizenship Canada ("IRCC") for authorization to enter and study in Canada. It is your responsibility to ensure that you are legally entitled, pursuant to Immigration, Refugees, & Citizenship Canada's requirements, to study at SFU. SFU FCRéL is committed to a diverse, inclusive research community and invites applications from all qualified individuals. Women and members of equity seeking groups are encouraged to apply.

SFU is an institution whose strength is based on its shared commitments to diversity, equity, and inclusion. Diversity is an underlying principle of our Strategic Vision, which pledges SFU to "foster a culture of inclusion and mutual respect, celebrating the diversity reflected among its students, faculty, staff, and our community." SFU is committed to ensuring that no individual is denied access to employment opportunities for reasons unrelated to ability or qualifications. Consistent with this principle, SFU will advance the interests of underrepresented members of the workforce, specifically Indigenous peoples, persons with disabilities, racialized persons, and women; embrace gender and sexual diversity; ensure that equal opportunity is afforded to all who seek employment at the University; and treat all employees equitably. Candidates that belong to underrepresented groups are particularly encouraged to apply.