



SIMON FRASER UNIVERSITY

Fuel Cell Research Laboratory

fcrel.ca

Directed by Dr. Erik Kjeang

School of Mechatronic Systems Engineering, Vancouver, Canada

Postdoctoral Fellowship Opportunity: Polymer Electrolyte Membrane Fuel Cells

There is an immediate opportunity for a fully funded 3-year postdoctoral 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 3rd, 2023, or as soon as possible.

Responsibilities:

- Advanced X-ray imaging of fuel cells using FCRel's unique multiscale X-ray computed tomography facility.
- In-house design and fabrication of membrane electrode assemblies and hardware 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.
- Conduct theoretical/computational modeling of physical, electrochemical, and chemical processes in PEMFCs.
- 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.
- Contribute to grant applications and management of scientific laboratory infrastructure.

Requirements:

- PhD degree in mechanical, materials, or chemical engineering, or a related discipline, completed within the past 5 years.
- Expertise in electrochemical energy conversion (fuel cells, electrolyzers, batteries, etc).
- Rich experimental research and/or mechanistic/computational modeling experience.
- Experience in transport phenomena, porous materials, electrochemistry, and/or polymer engineering.
- Experience with X-ray visualization and image processing is an asset.
- 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 PDF will report to Dr. Erik Kjeang, Canada Research Chair in Fuel Cell Science and Technology Development and Professor, Simon Fraser University. The position is managed by the university and the successful candidate will become a temporary university employee for the duration of the fellowship. The position is full-time (35 hrs per week), initially for one year and renewable for two more years subject to performance. The employment includes a competitive salary, paid vacation, and a full range of benefits, including government regulated benefits (Canada pension plan, employment insurance, provincial health care) as well as extended health care, dental care, employee and family assistance, and maternity / parental leave plans. For further details, please refer to: <https://www.sfu.ca/human-resources/research.html>.

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 by September 30th, 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. 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 work in Canada. It is your responsibility to ensure that you are legally entitled, pursuant to Immigration, Refugees, & Citizenship Canada's requirements, to work at SFU. SFU FCREL 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.