



PhD student for process simulation of hydrogen energy systems

The [Sustainable Bioeconomy Research \(SBR\) Group](#) at the University of British Columbia (UBC) invites applicants for a PhD position supervised by Dr. Qingshi Tu. This position is located at UBC's Vancouver Campus.

Application deadline

May 19, 2024

About the position

The transition towards a hydrogen-based energy system is pivotal for achieving decarbonization goals. However, this transition is encumbered by significant challenges, particularly in terms of making hydrogen both accessible and affordable at a scale comparable to fossil fuels. A critical yet often overlooked obstacle is the deficiency of sophisticated modeling tools, which are essential for understanding and navigating the complexities of hydrogen systems.

The SBR group collaborates with our industry partners to create an industry-representative simulation model which provide necessary data for the technoeconomic analysis (TEA) and life cycle assessment (LCA) used for understanding the financial and environmental implications of a given design of a H₂ production and distribution system. Such an understanding is critical for making an informed decision with respect to scaling up a H₂ system. As an integral part of this project, the PhD student will apply process simulation to obtaining inventory data for LCA and TEA.

Responsibilities include:

- Conduct systematic review of literature on subjects of research
- Conduct research on hydrogen energy systems. The PhD student is expected to develop the process simulation, LCA and TEA models related to the research.
- Gathering and analyzing data, drafting reports/manuscripts, preparing slides for progress updates, etc.

Duration & Salary:

- This PhD position is for four years, with a stipend of \$CAD 30,000 per annum.
- The anticipated start date is January 2025.

Required qualifications of the applicant:

- Completed a Master's degree in Chemical Engineering or other relevant disciplines.
- Be highly motivated, organized, a good communicator (written and verbal).
- Enjoy working in a team environment
- Proven Experience with biofuel and bioproduct research: e.g., peer-reviewed publications
- Proven experience in process simulation with one or more of the commonly used software (e.g., AspenPlus, ProSim, SuperPro Designer): e.g., peer-reviewed publications, technical reports

Additional qualifications of the applicant (i.e., good to have):

- Proven python programming experience: e.g., github repo, scripts, publications
- Proven experience with life cycle assessment: e.g., peer-reviewed publications, technical reports
- Proven experience with technoeconomic analysis: e.g., peer-reviewed publications, technical reports

How to apply

All qualified candidates are encouraged to apply. The SBR group has and will continue to nourish a safe, supportive and inclusive environment for all its members. We particularly encourage applications from members of groups that have been marginalized on any grounds enumerated under the BC Human Rights Code, including sex, sexual orientation, gender identity or expression, racialization, disability, political belief, religion, marital or family status, age, and/or status as a First Nation, Metis, Inuit, or Indigenous person.

Please apply by emailing Dr. Qingshi Tu (Qingshi.tu@ubc.ca) with the following document as a single PDF attachment:

- Cover letter
- Curriculum Vitae
- Copies of two relevant publications
- Contact information for 2 referees