

Circular Economy and Environmental Modeling

This fully funded graduate student position is part of a collaborative multi-group project exploring enzyme and microbe-based bioprocesses to enable a circular plastics economy. The student will have an opportunity to build on existing or develop new expertise in the following areas: technoeconomic analysis, life cycle assessment, process modeling, data science.

Research Project: apply technoeconomic analysis (TEA), life cycle assessment (LCA), process modeling, and data science to investigate the economic feasibility and environmental sustainability of various circular plastics scenarios for industry sectors (e.g., fresh produce packaging). Collect relevant data from industry and municipal partners for integration into these models, and prepare peer-reviewed publications and presentations based on this research.

Required Qualifications: Master's degree or equivalent degree in chemical engineering, industrial engineering, or a related field. Expertise in process modeling and technoeconomic analysis.

Preferred Qualifications:

- proficiency in LCA software (e.g., SimaPro, openLCA).
- Experience working with waste management and recycling systems.
- Track record of peer-reviewed publications and presentations at international research conferences.
- Good communication skills and an interest in collaborating with a multi-disciplinary team of scientists and engineers.

Employment Equity: Queen's University invites applications from all qualified individuals. We are committed to employment equity and diversity in the workplace and welcome applications from women, visible minorities, Aboriginal peoples, persons with disabilities, and LGBTQ2+ persons. We have a track record of supporting all our employees, including our Accommodation in the Workplace Policy, and will provide support in recruitment processes for applicants with accessibility needs. If you require accommodation during the application process, please contact Dr. Laurence Yang at laurence.yang@queensu.ca.

QCSB is the research lab of Dr. Yang at Queen's University: <https://biosyscompute.com>

Open Plastic is a Queen's University-led interdisciplinary research consortium focused on harnessing microbial technologies to drive a shift towards a zero-plastic waste future. More information:

- <https://www.queensu.ca/gazette/stories/rethinking-our-approach-tackling-plastic-waste>
- <https://openplastic.com>

Application Deadline

1 May 2022

Department of Admission

Chemical Engineering

Supervisor

Prof. Laurence Yang

Start Date

September 2022

Remuneration

\$25k/year minimum for 4 years.

Opportunities for top up are available if the candidate successfully secures external scholarships (NSERC, OGS, etc.).

Entering graduate students who win federal government tri-council awards are automatically provided a \$5,000 (Masters), \$10,000 (PhD) top-up award by Queen's.

To Apply

1) Apply using the form at <https://forms.gle/G2739GTELvQUWrnd8>, also accessed via the **Apply Now** button at <https://biosyscompute.com/career.html>.

2) The successful candidate is invited to apply formally to Queen's University. Note that acceptance to Queen's requires a full application to Queen's university.

More information on applying to Queen's school of graduate studies:

<https://www.queensu.ca/sgs/prospective-students/how-apply>