

8. Project Offerings

(This list will be updated as additional project offerings become known/available)

BEFORE beginning work in the lab and during the two terms of the project, all students **MUST** complete the following tasks:

- Attend all orientation sessions and workshops.
- Complete WHMIS training.
- Complete and submit to the Department Safety Officer, Kelly Sedore, the three required safety forms.
- Submit a literature review and research proposal.
- Receive training on the use of equipment and laboratory protocols.
- Meet with the research supervisor every two weeks to discuss progress and to evaluate the next step. It is the responsibility of the student to arrange this meeting.
- Discuss with the supervisor their experimental approach before work is done.
- Keep an up-to-date record in a hard cover notebook of all research activities including lab work, literature search, research meetings, etc..

Projects

Supervisor/s	Project Titles	Positions Available/ Remaining *	Student/s Confirmed
Dr. Pascale Champagne Civil/Chemical Engineering Ellis 206 613-533-3053 pascale.champagne@queensu.ca	TBD	?	
Dr. Dominik Barz Chemical Engineering Dupuis 213 613-533-6000 x79470 dominik.barz@queensu.ca	TBD	2	
Dr. Michael Cunningham Chemical Engineering Dupuis 315 613-533-2782 michael.cunningham@queensu.ca	See description below table.	?	

Dr. Cao Thang Dinh Chemical Engineering Dupuis 305 613-533-6618 caothang.dinh@queensu.ca	1) Developing single-atom electrocatalysts for the conversion of CO ₂ to methanol 2) Fabricating stable electrodes for electrochemical CO ₂ conversion 3) Boosting electrochemical CO ₂ conversion to fuels via system optimization	1	1) Ke Xu
Dr. Aris Docoslis Chemical Engineering Dupuis 208 613-533-6949 docoslis@queensu.ca	TBD	?	
Dr. Carlos Escobedo Chemical Engineering Dupuis 209 613-533-3095 carlos.escobedo@queensu.ca	NA	0	
Dr. Ahmad Ghahreman Robert M. Buchan Department of Mining Goodwin 340 613-533-3294 ahmad.g@queensu.ca	TBD	?	
Dr. Jeffrey Giacomini Chemical Engineering Dupuis 314 613-533-2768 giacomini@queensu.ca	1) Characterization of Polymeric Liquids for Light Scattering Analysis 2) Oscillatory Shear Flow of Polymeric Liquids	2	
Dr. Martin Guay Chemical Engineering Dupuis 406 613-533-2788 guaym@queensu.ca	TBD	?	
Dr. Nicolas Hudon Chemical Engineering Dupuis G10 613-533-2787 nicholas.hudon@queensu.ca	1) Exergy analysis and optimal control of chemical reactors 2) Numerical simulations	2	

	of conservation laws with interconnections		
Dr. Paul Hungler Chemical Engineering Beamish-Munro 302 613-533-6000 x78788 paul.hungler@queensu.ca	TBD	?	
Dr. Robin Hutchinson Chemical Engineering Dupuis 426 613-533-3097 robin.hutchinson@queensu.ca	On sabbatical	NA	
Dr. Marianna Kontopoulou Chemical Engineering Beamish-Munroe & Dupuis 207 613-533-3079 marianna.kontopoulou@queensu.ca	TBD	?	
Dr. Xiang Li Chemical Engineering Dupuis 403 613-533-6582 xiang.li@queensu.ca	TBD	?	
Dr. Kim McAuley Chemical Engineering Dupuis G11 613-533-6000 x777973 kim.mcauley@queensu.ca	TBD	?	
Dr. James McLellan Chemical Engineering Dupuis 316 613-533-2785 james.mclellan@queensu.ca	TBD	?	
Dr. Louise Meunier Chemical Engineering Dupuis 211 613-533-6000 x78048 louise.meunier@queensu.ca	1) Computational Fluid Dynamics modelling of nanoparticle transport in the human body 2) Bioaccessibility method development of	0 remaining	1) Danielle Clasky 9) Andrea Vervoort

	<p>physiologically representative gastro-intestinal fluid movements (includes lab work and computational fluid dynamics modelling)</p> <p>3) Bioaccessibility of hexavalent chromium from contaminated soils and tailings</p> <p>4) Bioaccessibility of rare earth elements from mine waste</p> <p>5) Environmental Fate of oil sands tailings adsorbed onto biodegradable polymers</p> <p>6) Human exposure investigation of graphene nanoplatelets (includes lab work and computational fluid dynamics modelling)</p> <p>7) Microplastics removal from freshwater systems</p> <p>8) Bioaccessibility of microplastics and additives</p> <p>9) Computational Fluid Dynamics modelling of T cell growth in a static culture system</p>		
<p>Dr. Scott Parent Chemical Engineering Dupuis 409 613-533-6266 scott.parent@queensu.ca</p>	TBD	?	
<p>Dr. Brant Peppley Chemical Engineering Dupuis G09 613-533-3247 brant.peppley@queensu.ca</p>	TBD	?	

Dr. Chris Pickles Robert M. Buchan Department of Mining Goodwin 342 613-533-2759 christopher.pickles@queensu.ca	TBD	?	
Dr. Laurence Yang Chemical Engineering Dupuis 304 613-533-6000 x75292 laurence.yang@queensu.ca	TBD	?	Herbert Yao

* N.B. If the number of positions available is listed as:

- "NA", means that the prospective supervisor is not available to supervise a 4th year research project
- "?", means that the prospective supervisor has not provided any information regarding the availability of research projects for the coming year
- "0", means that the supervisor and a CHEE 421 student have already agreed to work together on the proposed project
- "1" or more: means there may be 1 or more positions available - however, it is also possible that a supervisor and a student have already agreed to work together on a project, but have not yet notified the lab coordinator to update the project availability
- This table will be updated whenever the lab coordinator receives updates on project availability from supervisors and students.

Project Descriptions

M. Cunningham Lab:

An exciting and intriguing 4th year thesis project is available involving mathematical modelling and MATLAB. A set of mathematical equations modelling a polymerization reaction as a function of time and material properties have been developed. This project involves preparing a MATLAB script/set of scripts that can incorporate all the equations in a comprehensive package. The development of the software package will be developed in close collaboration with an experienced Ph.D. student. Ideally, the student is self-motivated and interested in expanding their knowledge of MATLAB coding and basic graphical user interface (GUI) development. In addition to preparing theoretical models, the student will be receiving experimental data from the Ph.D. student to input into the software for comparison purposes. For more information, please do not hesitate to reach out to michael.cunningham@queensu.ca and connor.sanders@queensu.ca.

Last updated Sep. 10, 2020