

McMaster University Graduate Studies in Chemical Engineering



Why choose **McMaster**?

McMaster University has a long-standing reputation as Canada's "most innovative" university and is one of Canada's top two research intensive universities. The University is located at the western end of Lake Ontario, about 70 km from Toronto and 100 km from Niagara Falls. Area attractions include the Waterfront Trail, the Bruce Trail and the Royal Botanical Gardens.

Chemical Engineering Faculty are engaged in leading edge research and we have concentrated research groups that collaborate with international industrial sponsors: Centre for Advanced Ophthalmic Materials (Insight), Centre for Advanced Polymer Processing & Design (CAPPA-D), Centre for Pulp and Paper Research, SENTINEL, and the McMaster Advanced Control Consortium (MACC).



We offer a Ph.D. Program and Master's Programs in the Following Research Areas:

Biomaterials

Tissue engineering, biomedical engineering, blood-material interactions

E.D. Cranston, K. Jones, H. Sheardown

Bioprocess Engineering

Membranes, bioseparations, bioreactors, analytical & environmental biotechnology

C. Filipe, T.R. Hoare, R. Ghosh, D. Latulippe

Polymer Science

Interfacial engineering, polymerization, polymer characterization, synthesis

E.D. Cranston, T.R. Hoare, R.H. Pelton, S. Zhu

Polymer Engineering

Polymer processing, rheology, computer modelling, extrusion

M.R. Thompson, L. Xi, S. Zhu

Process Systems

Process control, optimization, design, multivariate statistical methods

T.A. Adams II, V. Mahalec, P. Mhaskar, C.L.E. Swartz, J. Yu

Faculty

Thomas A. Adams II Ph.D.
University of Pennsylvania

Emily D. Cranston Ph.D.
McGill University

Kevin Dunn M.Eng
McMaster University

Carlos Filipe Ph.D.
Clemson University

Raja Ghosh D.Phil
Oxford University

Todd R. Hoare Ph.D.
McMaster University

David Latulippe Ph.D.
Pennsylvania State University

Kim S. Jones Ph.D.
University of Toronto

Rafik O. Loutfy Ph.D.
University of Western Ontario

Vladimir Mahalec Ph.D.
University of Houston

Prashant Mhaskar Ph.D.
University of California, Los Angeles

Robert H. Pelton Ph.D.
Bristol University

Heather Sheardown Ph.D.
University of Toronto

Christopher L.E. Swartz Ph.D.
University of Wisconsin

Michael R. Thompson Ph.D.
University of Waterloo

Philip E. Wood Ph.D., F.C.I.C
California Institute of Technology

Li Xi Ph.D.
University of Wisconsin, Madison

Shiping Zhu Ph.D.
McMaster University

Emeritus Faculty

Malcolm H.I. Baird Ph.D., F.C.I.C
University of Cambridge

John L. Brash Ph.D., F.R.S.C
Glasgow University

Cameron M. Crowe Ph.D., F.C.I.C
University of Cambridge

James M. Dickson Ph.D.
Virginia Polytechnic Institute and State University

Irwin A. Feuerstein Ph.D.
University of Massachusetts

Archie E. Hamielec Ph.D., F.R.S.C, F.C.I.C
University of Toronto

John F. MacGregor Ph.D., F.A.S.A., F.C.A.E.
University of Wisconsin

Thomas E. Marlin Ph.D.
University of Massachusetts

Paul A. Taylor Ph.D.
University of Wales

John Vlachopoulos D.Sc., F.C.I.C., F.S.P.E.
Washington University

Research Centres in Chemical Engineering

Faculty are engaged in leading edge research, much of which is conducted through university recognized research centres that collaborate with international industrial sponsors:

Centre for Advanced Polymer Processing & Design (CAPPA-D)

CAPPA-D is involved in research, education and technology transfer in the area of polymer processing and rheology. Projects involve formulation, conversion and characterization of plastics, mathematical modeling of single and twin screw extrusion, coextrusion, injection molding, thermoforming, rotational molding, injection molding, film blowing, reactive extrusion, mixing and coating. Funding is provided in the form of research grants and contracts from NSERC of Canada, Centres of Excellence (Ontario) and several corporations from Canada, USA, and overseas. Further information can be found at <http://mmri.mcmaster.ca/cappa-d/index.html>.

Interfacial Technologies Group

We are working toward developing the next generation of paper products. Our current research, in collaboration with industrial partners such as BASF, is primarily focused on finding ways to increase the mechanical strength of wet paper through the addition of polymers (both natural and synthetic) during the papermaking process. This work involves diverse elements of materials science, surface science, polymer chemistry, and biotechnology with the objective of developing better and more inexpensive ways to control paper strength. In addition, Dr. Robert Pelton is leading a university-industry research network called SENTINEL investigating the production and applications of biologically-active paper which can bind and deactivate a variety of pathogens on contact. Our expertise in polymers, gels and interfacial engineering has led to industry/government funded projects in ophthalmic biomaterials (Alcon) and in nickel flotation (funded by Vale). Find out more about the many new and exciting opportunities at <http://www.papersci.mcmaster.ca>.

McMaster Advanced Control Consortium (MACC)

The McMaster Advanced Control Consortium (MACC) was launched in 1988, and with international member companies spanning several sectors of the process industry, is world renowned. Research areas include model predictive control; fault tolerant control; dynamic optimization; supply chain optimization and scheduling; multivariable statistical analysis; and sustainable process design. A significant number of thesis projects involve industrial collaboration that gives them a "real world" focus. The consortium also provides students with excellent networking opportunities for developing contacts in industry, both through research collaboration and the annual MACC meeting. The large number of both Masters and PhD students that are supported through the consortium makes for a rich study and research environment, where students are able to interact with and learn from each other as well as the faculty. Further information on MACC may be found on the website: <http://www.macc.mcmaster.ca>.

McMaster Centre for Advanced Ophthalmic Biomaterials (Insight)

Department faculty and students are involved with Insight, a McMaster Centre created to further strengthen McMaster's international reputation for the development of new ophthalmic biomaterials and drug delivery systems. Insight projects include work supported through federal and provincial granting agencies as well as a significant number of industrially sponsored projects. Industry partners have included many of the major ophthalmic materials and drug delivery companies as well as smaller start up companies. Projects have included work on the development of new materials for artificial cornea and intraocular lens as well as projects involving the testing of commercially available and prototype materials.

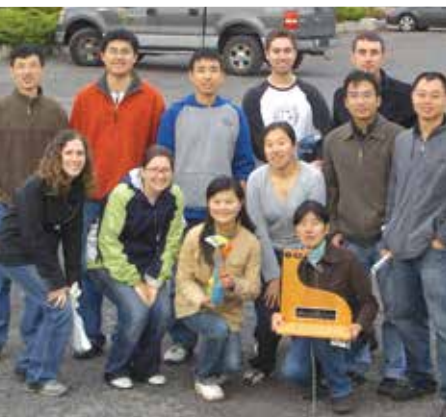


McMaster University
is consistently ranked
as one of the top 100
universities in the world.
Our graduate alumni have
careers around the globe –
from academia to industry
to government labs.



Graduate Club

The Chemical Engineering Graduate Students' Club helps foster a vibrant community among the graduate students. To do this, the club organizes several social events throughout the year, ranging from golf, badminton and squash tournaments, to pumpkin carving, games nights and international potluck. In addition, the club organizes an annual Graduate Research Conference which provides an opportunity for graduate students to present their research and network with colleagues and industrial visitors. The graduate club is entirely student run and provides a great way to meet new friends. More importantly, it ensures that the graduate student experience is rich and rewarding in our department. Since after all, there is more to graduate studies than just study! For more information visit the Graduate Club website at: <https://sites.google.com/site/cheqssmcmaster/>



Financial Support:

We provide financial support to students who are admitted to one of our full-time graduate degree programs who do not already have external support. The funding levels are competitive and are continually reviewed to ensure that students can concentrate on their studies.

Graduate Admissions:

The normal admission requirements for the Master's programs are a 4 yr undergraduate degree (or equivalent) in engineering or the physical sciences with a B+ average (McMaster University equivalency). Admission to the Ph.D. program requires successful completion of a research Master's degree with an average of at least B+. Exceptional undergraduate candidates will be considered for direct entry to Ph.D. Two reference letters by the applicant's previous supervisor or instructors are also assessed. Candidates whose mother tongue is not English must obtain a score of at least 85 in the TOEFL (Test of English as a Foreign Language).

On-line Application Forms and Information:

GRADUATE ASSISTANT

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