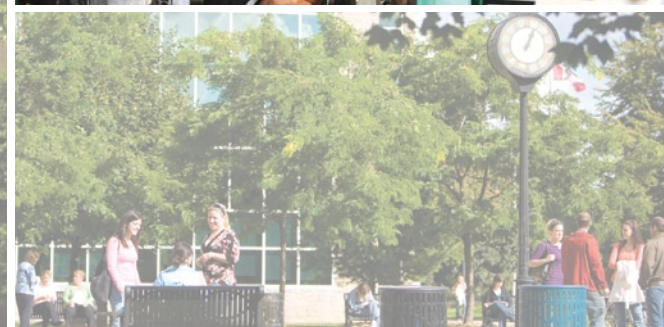
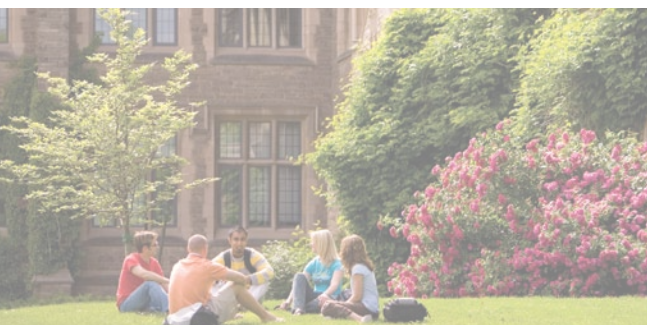


McMaster University Graduate Studies in Chemical Engineering



Why choose **McMaster**?

McMaster University has a long-standing reputation as Canada's "most innovative" university and is one of Canada's top 8 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 (CAPPAD), Centre for Pulp and Paper Research, SENTINEL, McMaster Advanced Control Consortium (MACC), and McMaster Institute for Polymer Production Technology (MIPPT).



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

Biomaterials

Tissue engineering, biomedical engineering, blood-material interactions

J.L. Brash, K. Jones, H. Sheardown

Bioprocessing

Bioseparation, environmental engineering

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

Membranes

Fabrication, characterization, and transport phenomena

J. Dickson, C. Filipe, R. Ghosh

Polymer Science

Interfacial engineering, polymerization, polymer characterization, synthesis

T.R. Hoare, R.O. Loutfy, R.H. Pelton, D.K. Potter, S. Zhu, K. Kostanski (Adjunct)

Polymer Engineering

Polymer processing, rheology, computer modelling, extrusion

A.N. Hrymak, M.R. Thompson, S. Zhu

Process Systems

Computer process control, optimization, multivariate statistical methods

B. Chachuat, V. Mahalec, T.E. Marlin (Emeritus), P. Mhaskar, C.L.E. Swartz

Faculty

Benoit Chachuat Ph.D.

Lorraine National Institute of Technology

James M. Dickson Ph.D.

Virginia Polytechnic Institute and State University

Carlos Filipe Ph.D.

Clemson University

Raja Ghosh D.Phil

Oxford University

Todd R. Hoare Ph.D.

McMaster University

Andrew N. Hrymak Ph.D., F.C.I.C.

Carnegie Mellon 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

David K. Potter Ph.D.

University of Waterloo

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

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

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

Leslie W. Shemilt Ph.D., F.R.S.C., F.C.A.E.,

F.C.I.C., F.A.I.Ch.E., F.E.I.C.

University of Toronto

Paul A. Taylor Ph.D.

University of Wales

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

Washington University

Donald R. Woods Ph.D., F.C.I.C., F.A.I.Ch.E.

University of Wisconsin

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://cappa-d.mcmaster.ca>.

Centre for Pulp and Paper Research and SENTINEL:

At the McMaster Centre for Pulp and Paper Research, 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 and in nickel flotation. 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 14-20 member companies over the past 14 years, is one of the largest of its kind world wide. Research areas include multivariate statistical analysis applied to plant performance monitoring, product design and control; model predictive control; control of hybrid systems; real-time optimization; control structure synthesis; process modeling and dynamic optimization. A significant number of these 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 Institute for Polymer Production Technology (MIPPT)

The McMaster Institute for Polymer Production Technology (MIPPT) places a major emphasis on polymer materials and reaction engineering. The institute does cutting edge research on both fundamental issues and industrial applications. It also works with polymer companies for development projects as well as provides measurement and testing services. The institute has state-of-the-art equipment and facilities that include a unique high-pressure CSTR reactor system for catalytic polymerization of olefins and a triple detector array high-temperature GPCV 2000. The institute's facilities allow the preparation and complete analysis of lab-scale polymer samples.



In 1999, the Canadian Society for Chemical Engineering selected 20 chemical engineers to receive national awards for making the greatest contributions to the profession in Canada in the 20th century. Four of the twenty award winners were faculty members of this department. 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 "Seminar Day" 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: <http://www.chemeng.mcmaster.ca/gradclub>



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 550 (213 computerized) in the TOEFL (Test of English as a Foreign Language).

On-line Application Forms and Information:

GRADUATE ASSISTANT

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