CHEMICAL ENGINEERING (ENCH)

Graduate Degree Program
College: Engineering

Abstract
The Chemical and Biomolecular Engineering Department offers educational opportunities leading to a Doctor of Philosophy degree or Masters of Science degree in Chemical Engineering. Both degrees require a written thesis and an oral examination on the thesis. Our faculty research interests cover a wide array of subject matter and is well-equipped for graduate research in; aerosol science and engineering, biochemical engineering, computational modeling, fluid mechanics and mixing, fuel cell technology, metabolic engineering and systems biology, nanoparticle technology, polymer processing and characterization, polymer reaction engineering, process control, thermodynamics and transport phenomena, and systems research. The Department maintains a distributed computing network consisting of research laboratories and a PC laboratory. Major research facilities including electron microscopy, X-ray diffraction, X-ray photoelectron spectroscopy, and NMR are coordinated through a variety of laboratories.

Financial Assistance
Graduate research assistantships typically support qualified Ph.D. students. Graduate fellowships are available on a competitive basis to both entering and continuing Ph.D. students. Typically only those Ph.D. students who enter the program in the Fall semester are eligible for fellowships. We are unable to provide financial support to students in our masters degree program.

Contact
Graduate Coordinator
2113 Chemical and Nuclear Engineering Building
4418 Stadium Drive
University of Maryland
College Park, MD 20742
Telephone: 301.405.5888
Fax: 301.405.0523
Email: enchgrad@deans.umd.edu

Website: http://www.ench.umd.edu

Courses: ENCH

Admissions
The programs leading to the Master of Science and Doctor of Philosophy degrees are open to qualified students holding the Bachelor of Science degree. Admission may be granted to students with degrees in other engineering and science areas from accredited programs, and it may be necessary in some cases to require courses to establish an undergraduate Chemical Engineering background. The general regulations of the Graduate School apply in reviewing applications.

General Requirements
• Statement of Purpose
• Transcript(s)

• TOEFL/IELTS/PTE (international graduate students (https://gradschool.umd.edu/admissions/english-language-proficiency-requirements))

Program-Specific Requirements
• Letters of Recommendation (3)
• Graduate Record Examination (GRE)
• CV/Resume
• Publications/Presentations

For more admissions information or to apply to the program, please visit our Graduate School website: www.gradschool.umd.edu/admissions

Application Deadlines

<table>
<thead>
<tr>
<th>Type of Applicant</th>
<th>Fall Deadline</th>
<th>Spring Deadline</th>
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<tr>
<td>Domestic Applicants</td>
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<tr>
<td>US Citizens and Permanent Residents</td>
<td>17 Jan</td>
<td>28 Sep</td>
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<tr>
<td>International Applicants</td>
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<tr>
<td>F (student) or J (exchange visitor) visas; A,E,G,H,I and L visas and immigrants</td>
<td>1 Feb</td>
<td>28 Sep</td>
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Other Deadlines: Please visit the program website at http://www.ench.umd.edu

Requirements
• Chemical Engineering, Doctor of Philosophy (Ph.D.) (https://academiccatalog.umd.edu/graduate/programs/chemical-engineering-ench/chemical-engineering-phd)
• Chemical Engineering, Master of Science (M.S.) (https://academiccatalog.umd.edu/graduate/programs/chemical-engineering-ench/chemical-engineering-ms)

Facilities and Special Resources
A number of special facilities are available for graduate study and research and are coordinated through the Polymer Reaction Engineering Laboratory, the Chemical Process Systems Laboratory, the Laboratory for Mixing Studies, the Thermophysical Properties Laboratory, the Laboratory for Biochemical Engineering and the Biochemical Reactor Scale Up Facility. These laboratories contain advanced process control computers, polymer processing equipment and polymerization reactors, polymer characterization instrumentation, fermentors, a laser Doppler anemometry facility, and an aerosol characterization facility.

Faculty

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First/Middle Name</th>
<th>Graduate Faculty Status</th>
<th>Academic Credentials</th>
<th>Positions</th>
</tr>
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<tbody>
<tr>
<td>Adomaitis</td>
<td>Raymond A.</td>
<td>Full Member</td>
<td>B.S., Illinois Institute of Technology, 1984; Ph.D., 1988.</td>
<td>Professor, Systems Engineering, Professor, Chemical Engineering</td>
</tr>
</tbody>
</table>
Al-Sheikhly Mohamad I.  Full Member  B.Sc., University of Baghdad, 1974; Ph.D., University of Newcastle, 1981.
Professor, Materials Science and Engineering Affiliate Professor, Chemical Engineering

Anisimov Mikhail A.  Full Member  Ph.D., Moscow State University, 1968.
Professor, Chemical Engineering Affiliate Professor, Chemical Physics

Asa-Awuku Akua  Adjunct Member
Associate Professor, Chemical Engineering

Bentley William E.  Full Member  B.S., Cornell University, 1982; M.Eng., 1983; Ph.D., University of Colorado-Boulder, 1989.
Distinguished University Professor, Applied Mathematics & Statistics, and Scientific Computation Distinguished University Professor, Bioengineering Affiliate Professor, Biological Sciences Affiliate Professor, Chemical Engineering

Calabrese Richard V.  Full Member  B.S., University of Rochester, 1969; M.S., University of Massachusetts-Amherst, 1971; Ph.D., 1976.
Professor, Applied Mathematics & Statistics, and Scientific Computation Professor, Chemical Engineering

Choi Kyu Yong  Full Member  B.S., Seoul National University, 1976; M.S., 1978; Ph.D., University of Wisconsin-Madison, 1984.
Professor, Chemical Engineering

DeVoe Donald Lad  Full Member  B.S., University of Maryland-
Associate Chair,

Dimitrakopoulos Panagiotis  Full Member  Diploma, National Technical University of Athens, 1991; M.S., University of Illinois, Urbana-Champaign, 1996; Ph.D., University of Illinois, Urbana-Champaign, 1998.

Ehrman Sheryl H.  Full Member  B.S., University of California-Santa Barbara, 1991; Ph.D., University of California-Los Angeles, 1997.
Professor, Chemical Engineering

Fisher John P.  Full Member  B.S., The Johns Hopkins University, 1995; M.S., University of Cincinnati, 1998; Ph.D., Rice University, 2002
Chair, Bioengineering Professor, Chemical Engineering Affiliate Professor, Chemical Engineering

Karlfsson Amy  Full Member  BS Iowa State University, Ames, IA 2003 Ph.D., University of Wisconsin-Madison, WI 2009
Assistant Professor, Chemical Engineering Affiliate Assistant Professor, Bioengineering
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Education</th>
<th>Affiliations</th>
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<tbody>
<tr>
<td>Klauda Jeffery</td>
<td>Full Member</td>
<td>Ph.D., University of Delaware, Associate Professor, Biophysics Associate Professor, Chemical Engineering Graduate Director, Chemical Engineering</td>
<td></td>
</tr>
<tr>
<td>Wachsmann Eric</td>
<td>Full Member</td>
<td>University of California, Berkeley, 1982; M.S., Stanford University, 1986; Ph.D. Stanford University, 1990.</td>
<td>Professor, Materials Science and Engineering Professor, Chemical Engineering</td>
</tr>
<tr>
<td>Kofinas Peter</td>
<td>Full Member</td>
<td>B.S., Massachusetts Institute of Technology, 1989; M.S., 1989; Ph.D., 1994.</td>
<td>Professor, Chemical Engineering, Bioengineering Professor, Chemical Engineering</td>
</tr>
<tr>
<td>Wang Chunsheng</td>
<td>Full Member</td>
<td>Ph.D., Zhejiang University, 1995</td>
<td>Professor, Chemical Engineering</td>
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<tr>
<td>Woehl Taylor</td>
<td>Adjunct Member</td>
<td></td>
<td>Assistant Professor, Chemical Engineering</td>
</tr>
<tr>
<td>Zachariah Michael R.</td>
<td>Full Member</td>
<td>B.S., University of California, 1979; M.S., University of California, 1981, Ph.D., University of California, LA, 1986</td>
<td>Professor, Applied Mathematics &amp; Statistics, and Scientific Computation Professor, Chemical Engineering Professor, Chemical Physics Professor, Chemistry Affiliate Professor, Materials Science and Engineering</td>
</tr>
<tr>
<td>Liu Dongxia</td>
<td>Full Member</td>
<td>BS, Shandong University, Ji'nan China 2000 MS, Chinese Academy of sciences Beijing, China, 2003 Ph.D., University of Rochester New York, 2009</td>
<td>Assistant Professor, Chemical Engineering</td>
</tr>
<tr>
<td>Raghavan Srinivasa R.</td>
<td>Full Member</td>
<td>B.Tech., IIT Madras, 1992; Ph.D., North Carolina State University, 1998.</td>
<td>Professor, Chemical Engineering</td>
</tr>
<tr>
<td>Sriram Ganesh</td>
<td>Full Member</td>
<td>B.Tech., Indian Institute of Technology, 1997; M. Tech., Indian Institute of Technology, 1999; Ph.D., Iowa State University, 2004.</td>
<td>Associate Professor, Chemical Engineering</td>
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