

Chemical & Materials Engineering

Degree Programs:

The Department of Chemical & Materials Engineering offers an M.S Degree in Engineering. A Ph.D. Degree is offered as a Chemical Engineering option to the Mechanical Engineering Ph.D. Degree and through collaborative programs in Materials Science or Biotechnology.

Research Labs:

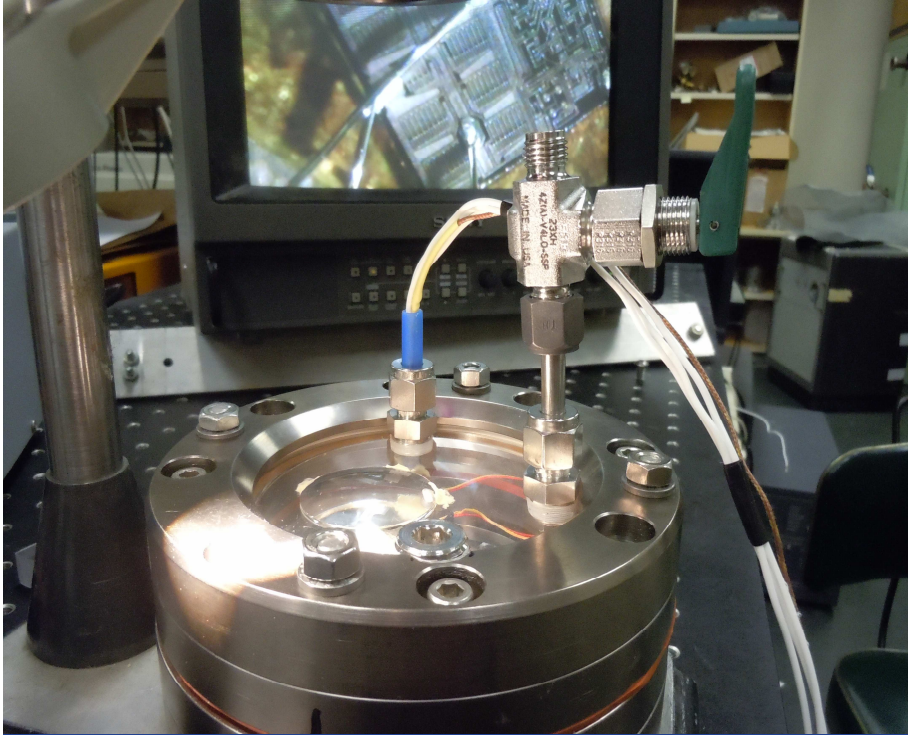
- Nanotechnology Laboratory
- Physicochemical Hydrodynamics Lab
- High-Performance-Computational Transport Lab
- Bioprocesses Bioseparations Lab
- Catalysis and Reaction Engineering Lab
- Materials Processing Lab
- Energy Research Lab

Distinctions & Partners

The location of the UAHuntsville campus provides a strong potential for chemical engineering graduate students to apply their research to real-world problems. The campus sits near the NASA Marshall Space Flight Center and Redstone Arsenal. It is also in proximity to over 200 high technology industries that support the corresponding aerospace, weapons systems, and biotechnology demands of these agencies. The campus is also near many chemical production plants, such as for fibers, catalysts, and polymers.

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EXPLORE CME at UAHuntsville

At UAHuntsville we have designed our curriculum and engaged in cutting edge research to prepare you as next generation researchers and innovators. Our faculty are well prepared to train you in key areas of importance for chemical engineering research. In a relatively small department, students enjoy close interactions with faculty members, fellow students and other research groups. We understand that the "World is Flat" and that our students must have the skills to compete against the very best from any university in the world. The department has a unique multidisciplinary research environment where collaborations within the University and with external industries and government labs can flourish. The faculty is involved in ongoing research thrust areas including: multi-phase transport phenomena, reaction engineering, interfacial sciences and technology, materials research and biotechnology.

CME Department Research Thrusts

Research Thrust I: Transport Phenomena

Departmental research activities reflect the interdisciplinary nature of modern chemical engineering research including materials and biotechnology. Faculty research areas cover fundamental transport phenomena, multi-phase flows, multi-scale computational mechanics, molecular interactions in solid/liquid systems, nanotechnology, catalyst and reaction engineering, and advanced materials processing engineering. In addition, two multi-disciplinary research thrusts areas in materials and biotechnology are available.

Research Thrust II: Biotechnology

Biology is an enabling science in chemical engineering education and research. At UAHuntsville, our interests are in understanding how to use the fundamental properties of proteins and DNA to design and implement sensors that can detect bacteria, viruses rapidly. The platform technology we are working on should allow researchers to obtain information about genes and gene expression in both prokaryotic and eukaryotic systems. The applications for this work include the development of rapid diagnostics for pathogens and an understanding of biochemical pathways within cells.

Research Thrust III: Materials Engineering

Some of the research areas involved in the Material Science program in Chemical Engineering are as follows: Crystal growth, transport property measurements, and characterization. Ceramic and metallic composites, catalysis and reaction engineering, fiber optic chemical sensing, combustion diagnostic of hypergolic fuels, and hydrogen storage. Surface science and technology as applied to adhesion phenomena, biocompatibility, corrosion, friction, heterogeneous catalysis, sensors, and thin films.

Faculty

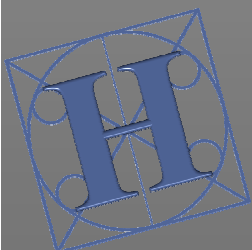
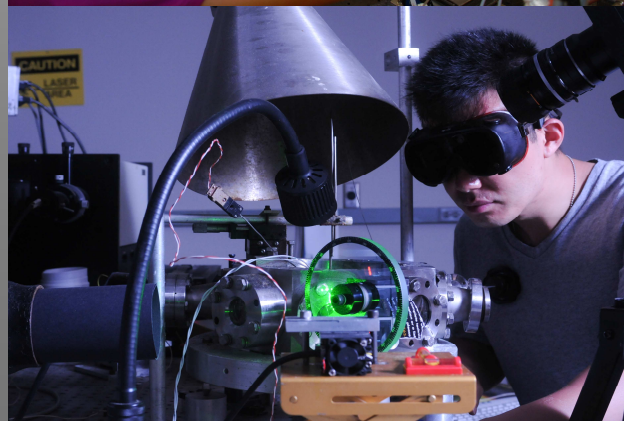
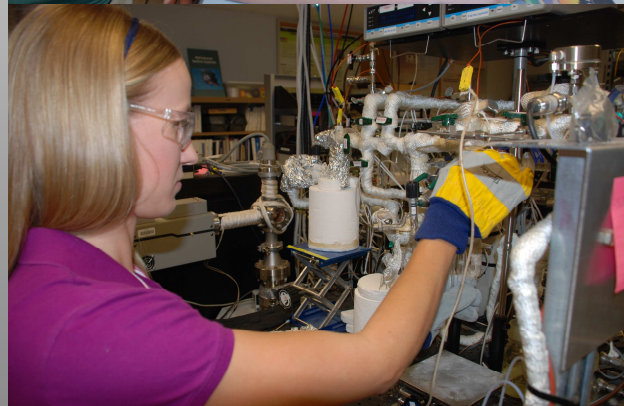
Banish, R. Michael; Associate Professor, Ph.D.
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Chen, Chien Pin; Professor and Chair, Ph.D.,
Michigan State University

Chittur, Krishnan K.; Professor, Ph.D., Rice University

Weimer, Jeffrey J.; Associate Professor, Ph.D., MIT



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