



CHEMICAL ENGINEERING Graduate Programs

ABOUT US

The Louisiana State University (LSU) Cain Department of Chemical Engineering is the largest chemical engineering program in Louisiana, serving students at both the undergraduate and graduate levels.

One of our key strengths is our close proximity to a thriving industry boasting over 200 chemical/ petrochemical facilities, among the largest such clusters worldwide.

Our department is comprised of 20 experienced full-time research faculty and 60+ outstanding graduate students, all of whom share a strong commitment to driving innovative research and providing a world-class education in chemical engineering.

For MS/PhD questions, contact us at:

che@lsu.edu

Web: <https://www.lsu.edu/eng/che/>



Chemical engineering (ChE) is an established and versatile engineering discipline. An advanced degree in ChE provides numerous opportunities to work in energy, pharmaceuticals, materials, biotechnology, and consumer goods industries. At LSU, you will work with top faculty and researchers to apply engineering and scientific principles of chemistry, physics, and biology to design new materials, processes, and systems.

What We Look For

We welcome applicants with undergraduate degrees in diverse STEM disciplines, including but not limited to Chemical Engineering, Chemistry/Biochemistry, Biochemical Eng., Material Science & Eng., and Physics.

We also welcome applicants with MS degree and/or substantial work experience in areas relevant to chemical engineering and similar disciplines. Our admission committee will look for evidence for creativity, self-initiative, dedication, and perseverance. We aim to admit students whose specific interests are well-matched with the research of our faculty.*

Coursework

Master of Science

Available with either a thesis option (24 credit h coursework, 6 credit h thesis) or non-thesis option (36 credit h coursework).

Doctor of Philosophy

To earn a PhD in ChE, students are required to complete 30 credit h of coursework at the graduate level and 24 credit h of dissertation research. Students typically complete the degree in five years.

Program Components

Year 1: Core coursework; advisor matching, research
 Year 2: Other coursework, PhD candidacy exam
 Year 3+: PhD Research

Grad Core Courses (12 credit hours)

CHE 7110	Mathematical Models in ChE
CHE 7120	Chemical Eng. Thermodynamics
CHE 7130	Heat & Mass Transport
CHE 7140	Chemical Reactor Design Methods

Other Courses (examples)

CHE 7800	Seminar
CHE 9000	Dissertation Res.
CHE 4285	Principles of Polymerization
CHE 4230	Adv. Proc. Control Systems
CHE 4220	Genetic Engineering
CHE 7700	Adv. Topics in ChE



Research Areas

- Advanced Materials
- Biochemical Eng.
- Catalysis
- Energy
- Environment
- Process Sys. Eng.
- Theoretical Simulations

Facilities

- World-class R&D laboratories
- Material Characterization (SIF, [↗](#))
- Supercomputer Clusters (HPC, [↗](#))
- Device Fabrication (CAMD, [↗](#))

More about our research:



[YouTube link](#)

ADMISSIONS REQUIREMENTS*

- Application to PhD program is encouraged. Application fee waiver is available for students with a GPA of ~3.5 (B+) or higher
- Completion of a bachelor's degree from an accredited college or university in chemical engineering-related field
- Completed Graduate School Application Form
- A Statement of Purpose (a summary of research experience)
- Three letters of recommendation
- TOEFL scores¹ (preferred minimum scores: 213 CBT/550 PBT/79 iBT). IELTS preferred minimum score: 6.5. GRE scores are not required.

¹International applicants from qualifying English-speaking countries may be exempt.

FINANCIAL AID

PhD Research and Teaching Assistantships: Starts at \$30.6 k, with full tuition waiver (\$29.6 k) and waiver of non-resident fees

Fellowships: Up to \$35 k, with full tuition waiver (\$29.6 k), and waiver of non-resident fees

DEADLINES

PhD Program: May 15 (Fall), Oct 15 (Spring)

MS Program: May 15 (Fall)

International students: Please make plans to apply as early as possible

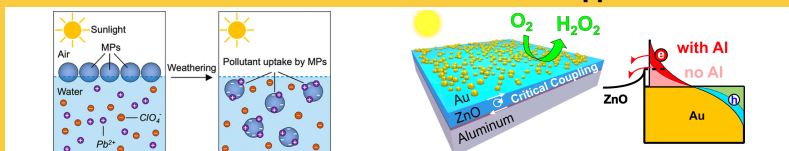
APPLY HERE:

[LSU GRADUATE SCHOOL](#)



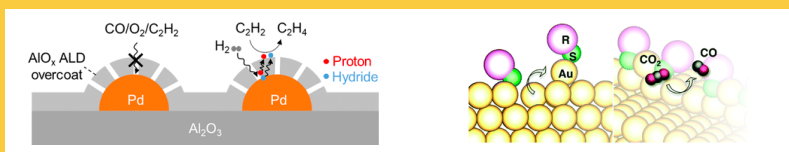
RESEARCH HIGHLIGHTS

Smart colloids and nanomaterials for environmental applications



Al Harraq, A., et al. ACS Env. Au **2022** ([↗](#)) | Leite, T.R., et al. Nano Lett. **2022** ([↗](#))
Willis, D., et al. ACS App. Mat. Int. **2020** ([↗](#))

New electrochemical strategies for clean energy and catalysis



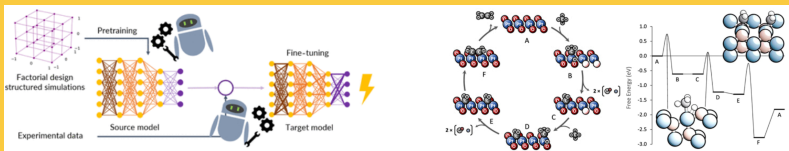
Ding, K., et al. Science **2018** ([↗](#)) | Fang, Y., et al. Cat. Sci. Tech. **2019** ([↗](#))

Commodity & functional polymers: precision synthesis & depolymerization



Ogbonna, N. et al. JACS Au **2022** ([↗](#)) | Dearman, M. et al. Poly Chem. **2022** ([↗](#)) |
Whajah, B. et al. Ind. Eng. Chem. Res. **2021** ([↗](#)) | Khan, A. et al. ACS BSE **2022** ([↗](#))

Machine learning-based process control and multi-scale modeling



Briceno-Mena, L.A., et al. Ind. Eng. Chem. Res. **2021** ([↗](#)) |
Li, G., J., et al. Electrochem. Soc., **2020** ([↗](#)) | Hong, S. et al. Biomolecules **2021** ([↗](#))

Funding Sources

- NSF, NIH, DOE, DOD
- LSU Board of Regents
- Private sectors (BASF, Dow, Chevron, ExxonMobil, and others)

Employment

Our graduates go on to work in the industry, academia, government facilities, and other fields. See AIChE employment database ([↗](#)).

*Individual ChE faculty do not admit applicants directly to their groups. Please do not send informal evaluation requests.

