



TEXAS TECH UNIVERSITY

# Department of Chemical Engineering

## ABOUT THE DEPARTMENT

### Enrollments (Fall 2017):

Foundational Freshmen	290
ChE Undergraduate	286
Master's	8
Doctoral	79

Tenure and Tenure-Track Faculty: 18

Endowed Chairs and Professors: 5

National Academy Members: 1

Research Expenditures (FY 16): \$5.6M

## DEGREES

Doctor of Philosophy in Chemical Engineering  
Master of Science in Chemical Engineering  
Bachelor of Science in Chemical Engineering

## CONTACTS

Dr. Sindee Simon | Whitacre Department Chair  
sindee.simon@ttu.edu

Dr. Rajesh Khare | Graduate Advisor  
rajesh.khare@ttu.edu

Dr. Mark Vaughn | Undergraduate Advisor  
mark.vaughn@ttu.edu

## STUDENT TESTIMONIALS

"I found the courses to be really effective and useful."

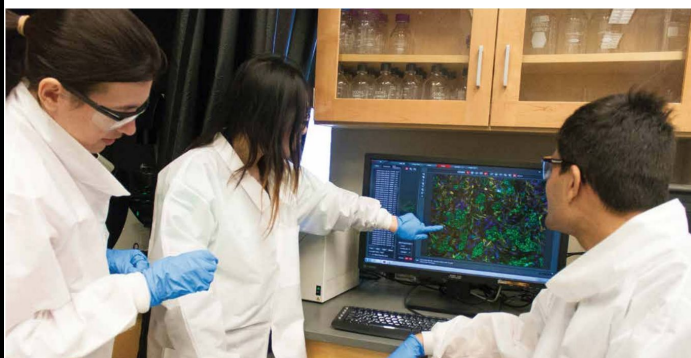
"Excellent working environment for research."

"Seminars were thought-provoking and scientifically stimulating."

"My advisor was a good mentor and leader. He motivated students to develop independent research skills."

"I have always felt that everyone was here to help me succeed."

"All the people in the department are very helpful and made my stay here wonderful."



## OVERVIEW AND RESEARCH

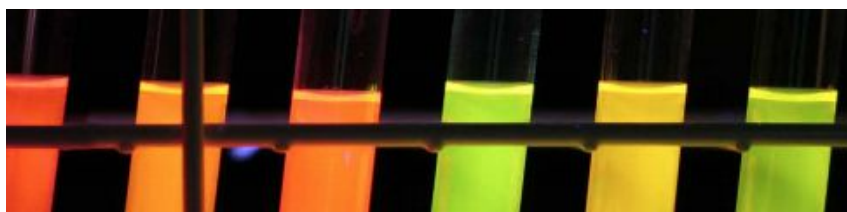
The Department of Chemical Engineering at Texas Tech University offers nationally ranked programs resulting in B.S., M.S. and Ph.D. degrees. The department has seen tremendous growth over the past ten years.

Overall faculty scholarship ranks 50th nationally according to Academic Analytics. Momentum continues to grow as we attract the very best students and faculty.

Research in the department covers a broad range of innovative experimental programs and state-of-the-art modeling and simulation activities. The M.S. and Ph.D. programs enable students to be involved in cutting-edge research in the following areas:

- Bioengineering
- Energy and Sustainability
- Polymers and Materials
- Simulation and Modeling in Chemical Engineering

Undergraduates are also strongly encouraged to participate in research, and a number of our undergraduate and graduate students have won national-level awards.



## FROM HERE, IT'S POSSIBLE



Ziye Dong received the 2017 Graduate Student Design and Research Award from the Biomedical Engineering Society (BMES) for his work in biodegradable nanofilms for isolating and recovery of cancer cells.



Mizanur Rahman was awarded the Investigator Space Flight Award at the 2016 meeting of the American Society for Gravitational and Space Research for his study of muscle strength and aging in *C. elegans*.



Jennifer Hewitt was awarded second place in the poster competition at the 2016 meeting of the American Society for Gravitational and Space Research. She plans to study the effect of microgravity on aging and strength in *C. elegans* as a model for aging in astronauts.



Qian Tian won first place in the Student Poster Competition at the International Conference for Thermal Analysis and Calorimetry (ICTAC) in 2016 for her study of nanoconfined equilibrium polymerization.



TEXAS TECH UNIVERSITY

Department of Chemical Engineering

## Chemical Engineering Research

### Faculty Specializations



**Dr. Ya-Wen (Winnie) Chang**

*Assistant Professor*

Soft and living matter, cell organization and behavior, microfluidics and 3D printing



**Dr. Mahdi Malmali**

*Assistant Professor*

Reaction and separation processes, water recycle and reuse, process intensification



**Dr. Chau-Chyun Chen**

*Professor and Jack Maddox Distinguished Engineering Chair in Sustainable Energy*

Molecular thermodynamics, phase equilibria, process modeling



**Dr. Jeremy Marston**

*Assistant Professor*

Fluid and granular flows, high speed imaging



**Dr. Gregory Fernandes**

*Research Assistant Professor*

Solution and adsorbed polymer behavior, structure and dynamics of colloidal systems



**Dr. Gregory B. McKenna**

*Horn Professor and John R. Bradford Chair in Engineering*

Polymer and soft matter physics, rheology, nanorheology, nanomechanics



**Dr. Harvinder Singh Gill**

*Associate Professor and Whitacre Endowed Chair of Science and Engineering*

Drug and vaccine delivery, bionanomaterials, immunomodulation



**Dr. Nurxar Nuraje**

*Assistant Professor*

Enhanced oil recovery, photocatalysis, renewable energy



**Dr. Ronald C. Hedden**

*Associate Professor*

Networks, gels, and elastomers, biofuels, polymer processing



**Dr. Al Sacco Jr.**

*Dean of the Whitacre College of Engineering*

Transition metal and acid catalysts, zeolite synthesis



**Dr. Chijuan Hu**

*Assistant Professor of Practice*

Undergraduate teaching laboratories and biochemical engineering



**Dr. Sidnee L. Simon**

*Whitacre Department Chair and Horn Professor*

Physics of glasses, nanoconfined reactions, calorimetry, dilatometry



**Dr. Sheima Jatib-Khatib**

*Assistant Professor*

Heterogeneous catalysis, membrane reactors



**Dr. Siva A. Vanapalli**

*Associate Professor and Bill Sanderson Faculty Fellow*

Microfluidics, mechanics of cells and biopolymers, colloidal assembly



**Dr. Rajesh Khare**

*Professor and Graduate Advisor*

Molecular simulations of polymers and soft matter, nanocomposites, rheology, separations



**Dr. Mark W. Vaughn**

*Associate Professor and Undergraduate Advisor*

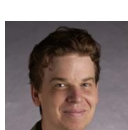
Nitric oxide in microcirculation, membrane transport



**Dr. Carla Lacerda**

*Assistant Professor*

Heart valve degeneration: models, mechanisms and prevention



**Dr. Brandon L. Weeks**

*Professor and Associate Dean for Research*

High explosives, nanolithography, microcantilever, crystal growth



**Dr. Wei Li**

*Assistant Professor*

Cell/polymer interaction, cell microenvironment, biomedical devices



**Dr. Theodore F. Wiesner**

*Associate Professor*

Solar energy, hydrogen production, CO<sub>2</sub> mitigation