LEHIGH UNIVERSITY

Department of Chemical & Biomolecular Engineering

KEY RESEARCH AREAS

BIOMOLECULAR SCIENCE & ENGINEERING
Biologically inspired therapeutics · Antibiotic alternatives · Biomaterials · Cell scaffolding & tissue engineering · Model-based/data-driven control of biomedical devices · Thermostable therapeutics and biomimetic environments

ENERGY & ENVIRONMENTAL ENGINEERING
Natural gas and biomass upgrading · CO_2 Capture · Environmental catalysis · Polymer sustainability, recycling & circularity · Fuel cells & electrocatalysis · Solar cells, photovoltaics & photochemistry · Batteries Organic semiconductors · Membrane-based separations · Sustainable processes at the food-energy-water nexus · Particle technologies

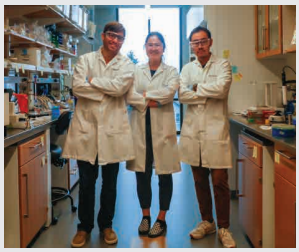
FUNCTIONAL MATERIALS & NANOTECHNOLOGY
Hierarchial nanoporous materials · Modified surfaces for adhesion, friction, wetting & biocompatibility · Field-driven colloidal assemblies · Organic/inorganic/hybrid thin films · Solid state & condensed phase electrochemistry · Conjugated polymer design & synthesis · Quantum dots · Design of novel catalysts

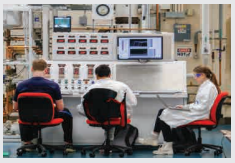
COLLOIDS, EMULSIONS & INTERFACE SCIENCE
Operando spectrokinetic characterization of reactive surfaces · Biological interfaces in disease · Drop fluidics, bio-nano interfaces Molecular simulations · Fracture & tribology of polymeric interfaces · Biofouling · Pattern formation · Poylmer self-assembly & charged species sequestration

COMPUTATION, SYSTEMS & MACHINE LEARNING
Artificial intelligence for chemical and biological systems · Modeling complex reaction networks Computational heterogeneous catalysis Coarse-grained modeling of molecular systems Machine learning-enhanced molecular simulations · Automation & control of emerging processes & new devices · Process systems design · Technoeconomics and life cycle analysis · Non-linear Operations

115+ year history of excellence & impact in research

Vibrant faculty-student culture at a scale enabling personalized mentorship





DEGREES OFFERED
PhD in Chemical Engineering
ME, MS in Chemical Engineering
ME in Biological Chemical Engineering
ME in Chemical Energy Engineering
All ME degrees also offered as a distance option

FOR MORE INFORMATION