



SCHOOL OF
CHEMICAL ENGINEERING
College of Engineering, Architecture and Technology

OKLAHOMA STATE UNIVERSITY

GRADUATE PROGRAMS

M.S. and Ph.D. Programs in Chemical Engineering
M.S. and Ph.D. Programs in Petroleum Engineering

RESEARCH AREAS



Batteries



Catalysis



Colloids



Drug
Delivery



Modeling/
Simulation



Nanomaterials



Petroleum
Engineering



Polymers



Tissue
Engineering

FACULTY

Clint Aichele: Interfacial Phenomena; Emulsion Formation and Stability; Flow Assurance; Separations; Reservoir Wettability Alteration

Mohammed F. Al Dushaishi: Drilling Vibrations and Drilling Mechanics; Drilling Fluids and Hydraulics; Lost Circulation Events and Treatments; Bit Rock Interactions; Fluid Structure Interaction; Wellbore Integrity; Data Analytics

Marimuthu Andiappan: Plasmonic Photocatalysis; Heterogeneous Catalysis; Homogeneous Catalysis; Process Modeling and Simulation

Prem Bikkina: Interfacial Phenomena Relevant to Geological Sequestration and Enhanced Oil Recovery (EOR); Macro and Microfluidics Based EOR Using ASP, WAG, CO₂, and CO₂ Foams; Wettability-Based Dissolved Gas Separation and Nucleate Boiling

Hong Je Cho: Heterogeneous Catalysis, Adsorption and Reaction Engineering; Nanoporous Materials; Catalyst Design; Zeolite; Renewable Energy; Sustainable Chemical Process

Heather Fahlenkamp: Tissue Engineering: Advanced Tissue-Equivalent Models to Study Inflammation Associated with Vascular Complications, Allergens, and Infectious Agents; Drug Delivery: Nanoparticles and Biomembranes for Controlled Delivery

Yu Feng: Computational Fluid-Particle Dynamics and Advanced Numerical Methods; Physiologically Based Pharmacokinetic (PBPK) Modeling; Particulate Matter Transport Phenomena; Lung Aerosol Dynamics; Pulmonary Health Risk Assessment; Pulmonary Drug Delivery Optimization; Non-invasive Pulmonary Disease Diagnosis

Geir Hareland: Working closely with all aspects of the drilling and completion industry including contractors, service companies and operators

Shohreh Hemmati: Green and Sustainable Metal Nanostructure Synthesis; Millifluidic Continuous Reactors for Nanomaterial Synthesis; VLPs Expression and their Application as Biotemplate for Metal Nanostructure Synthesis; *In-situ* UV-vis and FTIR Spectroscopy; Transparent Conductive Film (TCF) Manufacturing

Zheyu Jiang: Process systems engineering: Developing advanced mathematical modeling, optimization, and artificial intelligence tools to solve challenges in separations, pharmaceutical and agrochemical R&D and manufacturing, digital agriculture, and Food-Energy-Water Nexus

Seok-Jhin Kim: Membranes and Thin Films of Nanostructured Materials; Controlled-Pore-Size Membranes for Water Purification and Gas Separation; Gas Transport and Diffusion Study in Modified-Pore Membranes

Hunjo Lee: Hydraulic Fracturing; Natural Fractures; Rock Fracture Mechanics; Reservoir Geomechanics; Induced Seismicity

Sundar V. Madihally: Molecular Bioengineering: Understanding the mechanisms at the molecular level that trigger cellular processes in stem cell differentiation and proliferation, growth inhibition using various engineering tools, and medical science

Mileva Radonjic: Interdisciplinary science and engineering approach to clean and responsible energy production based on geomimicry; Microstructural characterization of Portland cement, graphene, clays and zeolite-based materials for protection of air, water and soil

Josh D. Ramsey: Gene Delivery Vectors; Macromolecular Drug Delivery; Directed Evolution of Enzymes; Process Engineering

Jindal Shah: Monte Carlo and Molecular Dynamics Simulations; Electronic Structure Calculations; Machine Learning; Phase Equilibria; Biodegradation; Ionic Liquids

Alan Tree: Research Administration; Materials Science; Mechanics and Rheology; International Education; Research in the Land Grant Movement

Jeffery L. White: Heterogeneous Catalysis; Catalyst Design; Fundamental Understanding of Reaction Mechanisms; Heterogeneous Polymeric Materials, Copolymers, Composites, and Blends; Nuclear Magnetic Resonance Spectroscopy; Diffusometry

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