

2021 Dissertation Titles

- Control of the function, dynamics, and aggregation of proteins with light illumination, Principal Investigator (P.I): Ted Lee, Associate Professor
- Machine-Learning for Modeling of Complex Materials and Media, P.I: Muhammad Sahimi, Professor
- "Engineering Chimeric Antigen Receptor-Directed Immune Cells for Enhanced Antitumor Efficacy in Solid Tumor, P.I: Pin Wang, Professor"
- Dynamics of Water in Nanotubes: Liquid Below Freezing Point and Ice-like near Boiling Point, P.I: Muhammad Sahimi, Professor

2020 Dissertation Titles

- Molecular- and Continuum-Scale Simulation of Single- and Two-Phase Flow of CO₂ and H₂O in Mixed-Layer Clays and a Heterogeneous Sandstone, P.I: Muhammad Sahimi, Professor
- Fabrication and Analysis of Prepregs with Discontinuous Resin Patterning for Robust Out-of-Autoclave Manufacturing, P.I: Steven Nutt, Professor
- High-Throughput Nanoparticle Fabrication and Nano-Biomembrane Interactions, P.I: Noah Malmstadt, Professor
- Stability and Folding Rate of Proteins and Identification of Their Inhibitors, P.I: Muhammad Sahimi, Professor
- Scale-up of Vapor-Phase Deposition of Polymers: Towards Large-Scale Processing, P.I: Malancha Gupta, Professor
- Vapor Phase Deposition of Dense and Porous Polymer Coatings and Membranes for Increased Sustainability and Practical Applications, P.I: Malancha Gupta, Professor
- A Molecular Dynamics Study of Interactions between the Enzyme Lysozyme and the Photo-Responsive Surfactant Azobenzene trimethylammonium bromide (azoTAB), P.I: Katherine Shing, Associate Professor
- Metabolomic and Proteomic Approaches to Understanding Senescence and Aging in Mammary Epithelial Cells, P.I: Nicholas Graham, Assistant Professor
- Systems Approaches to Understanding Metabolic Vulnerabilities in Cancer Cells, P.I: Nicholas Graham, Assistant Professor
- Rapid Microfluidic Prototyping for Biological Applications ^[1]via Stereolithographic 3-D Printing: ^[2]A Journey, P.I: Noah Malmstadt, Professor

2019 Dissertation Titles

- Vapor Phase Deposition of Dense and Porous Polymer Coatings and Membranes for Increased Sustainability and Practical Applications, P.I: Malancha Gupta, Professor
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Professor

- Stability and Folding Rate of Proteins and Identification of Their Inhibitors, P.I: Muhammad Sahimi, Professor
- Fabrication of Functional Porous Membranes via Polymerization of Solid Monomer by a Vapor-Phase Initiator, P.I: Malancha Gupta, Associate Professor
- Novel Processing of Liquid Substrates via Initiated Chemical Vapor Deposition, P.I: Malancha Gupta, Associate Professor
- Inorganic/Organic Hybrid Materials and Grafted Coatings via Vapor Phase Deposition Processes, P.I: Malancha Gupta, Associate Professor
- Development of Novel Optical Materials for Whispering Gallery Mode Resonator for Nonlinear Optics, P.I: Andrea Armani, Professor
- The Study of CO₂ Mass Transfer in Brine and in Brine-Saturated Mt. Simon Sandstone and the CO₂/Brine Induced Evolution of its Transport and Mechanical Properties, P.I: Kristian Jessen, Associate Professor

2018 Dissertation Titles

- Synthesis and Characterization of Novel Donor-Acceptor Systems for Solar Water Splitting, P.I: Mark Thompson, Professor
- Fabrication, deposition, and characterization of size-selected metal nanoclusters with a magnetron sputtering gas aggregation source, P.I: Andrea Armani, Professor
- A High Efficiency, Ultra-Compact Process for Pre-Combustion CO₂ Capture, P.I: Theodore Tsotsis, Professor
- Engineering Therapeutics for the Improved Antitumor Efficacy of Chimeric Antigen Receptor T Cell Therapy, P.I: Pin Wang, Professor
- Molecular-Scale Studies of Mechanical Phenomena at the Interface Between Two Solid Surfaces: From High Performance Friction to Superlubricity and Flash Heating, P.I: Muhammad Sahimi, Professor
- Chemical Recycling of Amine/Epoxy Composites at Atmospheric Pressure, P.I: Steven Nutt, Professor
- Nanostructure Design of Sulfur Cathodes and Lithium Metal Anodes for Lithium-ion Batteries, P.I: Chongwu Zhou, Professor
- Statistical Modeling and Process Data Analytics for Smart Manufacturing, P.I: Joe Qin, Professor
- Molecular Dynamics Studies of Protein Aggregation in Unbounded and Confined Media, P.I: Muhammad Sahimi, Professor
- Engineering Solutions for Biomaterials - Self-assembly and Surface Modification of Polymers for Clinical Applications, P.I: Richard Roberts, Professor
- Continuous flow synthesis of catalysts in custom made reactors with flow and temperature studies., P.I: Noah Malmstadt, Professor

2017 Dissertation Titles

- Reversible Thermo-responsive Materials for Temporary Closure of Ocular Trauma, P.I: Mark Thompson, Professor
- Multiscale and Multiresolution Approach to Characterization and Modeling of Porous Media: From Pore to Field Scale, P.I: Muhammad Sahimi, Professor
- Big Data Challenge via Tennessee Eastman Process, P.I: Joe Qin, Professor
- Engineering of CAR-T cells for treatment of solid cancers, P.I: Pin Wang, Professor
- Chemical and Mechanical Deformation of Porous Media and Materials During Adsorption and Fluid Flow, P.I: Muhammad Sahimi, Professor
- Combination Therapy for Solid Tumors, P.I: Pin Wang, Professor
- Concurrent Monitoring and Diagnosis of Process and Quality Faults with Canonical Correlation Analysis, P.I: Joe Qin, Professor
- Characterization, Process Analysis, and Recycling of a Benzoxazine-Epoxy Resin for Structural Composites, P.I: Steven Nutt, Professor
- Lab-scale and Field-scale Study of Siloxanes Contaminants Removal from Landfill Gas, P.I: Theodore Tsotsis, Professor
- Methanol Synthesis in a Contactor-Type Membrane Reactor, P.I: Theodore Tsotsis, Professor
- Phosphorylation kinetics of T-cell receptor signaling domain in vitro, P.I: Pin Wang, Professor