

Engineering Research at the University of South Alabama

Chemical and Biomolecular Engineering

Dr. Grant Glover glover@outhalabama.edu

- z Adsorbent materials including metalorganic framework (MOF) carbons, and composites
- z Fibers functionalized with nanostructures and quantum dots
- z Surface chemistry

Dr. Silas Leavesley leavesley@outhalabama.edu

- z Develop biomedical and clinical imaging and detection methods
- z Illumination technologies in imaging
- z Hyperspectral imaging and analysis
- z Microscopy, endoscopy, and small animal fluorescence imaging

Dr. Brooks Rabideau brabideau@outhalabama.edu

- z Predicting thermodynamic and transport properties of ionic liquids
- z Molecular simulations of biomass dissolution
- z Binary adsorption in metalorganic framework using molecular simulation
- z Yield stress determination using squeezing flow
- z Noninvasive imaging of paste extrusion using MRI velocimetry
- z Self-assembly of nanoparticle superlattices

Dr. Nicholas Sylvester nsylvest@outhalabama.edu

- z Microcontinuum fluid mechanics
- z Multicomponent adsorption
- z

Engineering College Research

Dr. John Cleary cleary@southalabama.edu

- z Post-disaster structural evaluation and investigation
- z Forensic analysis, investigation, and evaluation
- z Large and small scale structural testing (including in-service)
- z Construction vibration evaluation and investigation
- z Concrete testing, experimentation, and evaluation

Dr. Trung Do trungdo@southalabama.edu

- z Hurricane wind, wave, and surge
- z



College of Engineering

Points of contact:

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Chemical and Biomolecular
Engineering
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Civil, Coastal, and
Environmentalpe her3.5 (teati.

Engineering

Coastal

Dr. Nigel Temple natemple@southalabama.edu

- z Coastal resilience, vulnerability, and adaption
- z Nature-based shore protection including living shorelines
- z Coastal mapping, monitoring, and measurement studies
- z Biological responses to physical processes (e.g., waves)
- z Low-cost environmental sensing
- z Citizen science, stakeholder-driven coastal research

Dr. Kaushik Venkiteshwaran kvenkiteshwaran@southalabama.edu

- z Chemical and biological wastewater treatment
- z Advanced oxidation targeting organic contaminant and pathogen destruction
- z Developing bio-adsorbents for nutrient recovery and contaminant removal
- z Modelling microbial interactions in natural and engineered environments
- z Relating microbes to biological process performance
- z Developing novel microbial cultures for wastewater treatment

Dr. Bret Webb bwebb@southalabama.edu

- z Coastal resilience, vulnerability, and adaptation
- z Highways and bridges in the coastal environment
- z Natural hazards including coastal storms and sea level rise
- z Nature-based shore protection including living shorelines
- z Coastal mapping, monitoring, and measurement studies

Dr. Kevin McE kwhite@southalabama.edu

- z Drinking water, wastewater, & storm water treatment
- z Constructed wetlands for wastewater and storm water treatment
- z Onsite and small-community wastewater technologies and management
- z Decentralized wastewater technologies and concepts
- z Micro-pollutants (pharmaceuticals, etc.) in wastewater & their treatment
- z Low-impact development (storm water management) practices

Dr. Shenghua Wu shenghuawu@southalabama.edu

- z Asphalt technology and pavement engineering
- z Smart, resilient and green pavement materials characterization and design
- z Advanced laboratory characterization for asphalt binders and mixtures
- z Pavement recycled materials, rehabilitation and maintenance, and sustainability
- z Pavement performance and modeling, mechanistic-empirical pavement design

Engineering Research at the University of South Alabama

Electrical and Computer Engineering

Dr. Yousef El-Sharkh yelshark@uthalabama.edu

- z Smart grid
- z Distributed generation
- z Renewable and alternative energy systems and virtual power plants
- z Integration of renewables with smart grid
- z Phasor measurement units and wide area monitoring systems
- z Multiagent systems and distributive control
- z Energy storage systems
- z Power system planning and control, power quality, and power electronics
- z Artificial intelligence (intelligent optimization techniques) in power system problems

Dr. Na Gong nagong@uthalabama.edu

- z Artificial intelligence (AI) technology
- z Intelligent data-enabled computing circuits and systems
- z Wearable mobile systems
- z Multilevel (device/circuit/architecture/application) efficient and privacy-preserving IC circuits and systems
- z Energy-efficient computing
- z Memory systems for video, vision, and deep learning
- z Neuromorphic computing
- z Embedded vision

Dr. Aurangzeb Khan akhan@uthalabama.edu

- z Multijunction super high efficiency solar cells (GaAs/Si)
- z Single-junction solar cells on low-cost Si and Ge substrates
- z Defects in optoelectronic devices
- z Microelectronics, design of integrated circuits, low-voltage/low-power MEMS simulation
- z Radiation-hard electronic materials; nanostructures, nanoelectronics, solid state sensors for space applications
- z Advanced materials for PhotoElectroChemical (PEC) hydrogen production, nanocomposites, carbon nanotubes and nanofibers

Dr. Hulya Kirkici hkrci@uthalabama.edu

- z Electrical insulation
- z Pulsed power engineering
- z Breakdown characteristics of dielectrics
- z Compact plasma switches
- z Pulsed plasmas
- z Laser and lidar systems

Dr. Saeed Latif slatif@uthalabama.edu

- z Antennas and sensors for biomedical devices
- z Large-scale antenna arrays for wireless systems
- z Metasurfaces for millimeter wave applications
- z Miniaturized antennas for satellite applications
- z z

