College of Engineering
LAMAR UNIVERSITY

A TEXAS STATE OF MIND™

Graduate Programs

Graduate Programs

3 Welcome from Dean Palanki

4 Academic Programs

5 Applying for Admission

6 Campus Life

8 Chemical Engineering

10 Civil Engineering

12 Electrical Engineering

14 Industrial Engineering

16 Mechanical Engineering

18 Engineering Research Centers

College of Engineering

Dean
Srinivas Palanki

Senior Director of Graduate Studies
Jerry Lin

Assistant Director of Graduate Studies
Mary Givan

Director of Undergraduate Studies
Peyton Richmond

Director of Outreach and Student Services
Erin Lovelady

Coordinator of Marketing and Communication
Ryan Litchfield

College of Engineering Mission
The mission of the College of Engineering is to provide students with high quality, accessible undergraduate and graduate engineering education; to engage and empower students with skills and knowledge to thrive in professional careers; and to serve society through economic and technological development of Southeast Texas and beyond.

Mailing Address
Lamar University
College of Engineering
4400 MLK Blvd.
Beaumont, TX 77710

lamar.edu/engineering

A Message from Dr. Palanki

It is an exciting time to be part of Lamar University. The College of Engineering is dedicated to empowering students and faculty to tackle the world's most pressing challenges. We are achieving this by combining our strength in excellent teaching with innovative research at the bachelors, masters and doctoral levels.

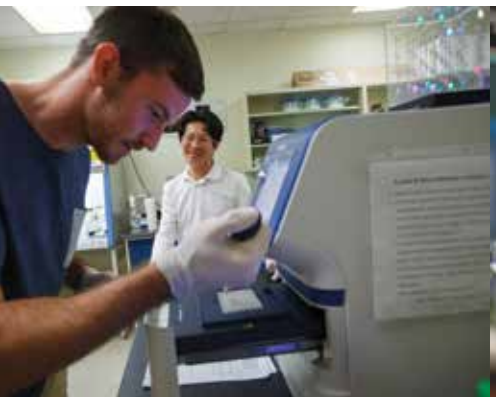
We have recently embarked on a major effort to upgrade our undergraduate and graduate offerings. If you stop by the Cherry building, you will immediately notice changes that are designed to provide a very inviting atmosphere for students. The classrooms as well as student study areas are being renovated – refreshed, refurbished and rewired to promote learning in the digital era. The research laboratories are humming with new equipment, offering opportunities to be involved in cutting-edge research.

Your potential is limitless in the College of Engineering. We provide the resources for student success and inspire the engineers of tomorrow through advanced research opportunities and coursework. With the most diverse master's and doctoral programs at Lamar University, the College of Engineering strives to provide a world-class education for all students and prepare them for all the world has to offer.

No matter what path you choose, we are ready to show you the way to reach your goals. Our faculty are passionate about the courses they teach and the research they conduct. If you are ready to explore a world of new opportunities, Lamar University is the place to start.

With Cardinal pride,

Srinivas Palanki, Ph.D.
Dean, College of Engineering
Charles and Eleanor Garrett Chair



Challenging Academics

The College of Engineering offers degrees at the bachelors, masters, and doctoral levels in the field of Chemical, Civil, Environmental, Electrical, Industrial and Mechanical Engineering. Each program is designed with the student in mind when it comes to advanced technology and research. Your advanced degree at Lamar University will ensure your success in your field of choice.

Doctoral Programs

- **Doctor of Philosophy (Ph.D.)** is designed for students to advance the knowledge in one or more areas in chemical engineering. This research intensive program requires a dissertation addressing critical engineering issues faced by chemical industries and the global research community. Assistantships are available for students with highly competitive academic records.
  Discipline: Chemical
- **Doctor of Engineering (D.E.)** is designed to study fundamental/practical engineering problems of a complex nature. The research intensive program requires a doctoral dissertation in one of the engineering disciplines. Students are expected to work with their academic advisors and dissertation committees in funded research projects that advance the understanding of engineering. Assistantships available for students with highly competitive academic records.
  Disciplines: Civil, Electrical, Industrial, Mechanical

Masters Programs

- **Master of Engineering (M.E.)**
  Non-thesis, 36-semester hour program designed to suit the needs of the practicing engineer in one of the engineering disciplines within the College of Engineering.
- **Master of Engineering Science (M.E.S.)**
  30-semester hour thesis-required program that prepares students to independently develop solutions in their desired discipline.

M.E. and M.E.S. Specializations

- Computer Engineering
- Process Systems Engineering
- Materials Engineering
- Supply Chain and ERP
- Data Mining and Statistics
- Manufacturing, Safety and Automation
- Environmental Engineering
- Structural Engineering
- Power and Energy
- Advanced Machine Design, Optimization and Simulation

- **Master of Engineering Management (M.E.M)**
  Non-thesis, 36-semester hour program at the graduate level from the College of Engineering and College of Business. Course work is designed to build upon the education received after completing an accredited bachelor's degree in engineering and the individual's professional experience. The program provides an optimal set of courses that lead to careers in management of enginering and technology projects.
- **Master of Science in Environmental Engineering (M.S.)**
  30-semester hour thesis program designed to provide engineers with the highly specialized engineering expertise required by industry and regulatory agencies at federal, state, and municipal levels to solve large, complex environmental problems threatening the natural ecosystem. A non-thesis option available with 6 hours of electives.
- **Master of Science in Environmental Studies (M.S.)**
  30-semester hour thesis program designed for students who wish to continue work in their scientific specialty as it relates to environmental affairs. It is intended for individuals who wish to work in the evaluation, operations, and/or regulatory aspects of the field. A non-thesis option is available with 6 more semester hours of electives.

Applying for Admission

Admission Requirements

1. Bachelor degree in engineering
2. Official transcripts, minimum GPA 2.5
3. GRE with minimum Quantitative score of 151
4. TOEFL (min. score of 75)
   or IELTS (min. score 6.5)

How To Apply

1. Apply online at applytexas.org
2. Submit official transcripts from all post-secondary institutions
3. Submit official GRE/TOEFL/IELTS scores through testing agencies

For more information, contact: Office of Graduate Programs - coe.gradprog@lamar.edu or (409) 880-8736

Campus Life

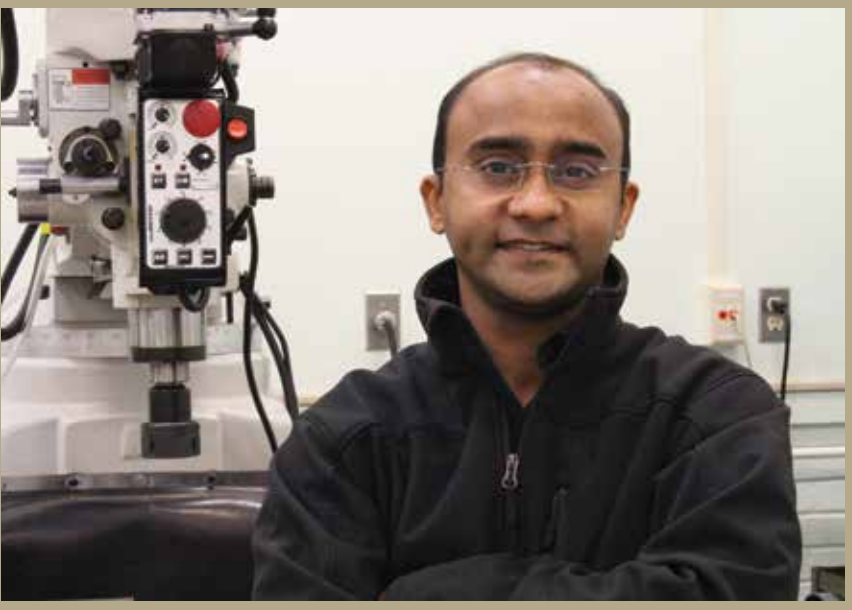
Lamar University offers a sense of community that you would expect from a smaller university while offering students the resources of a much larger university.

As you become acclimated as a student, you will find a sense of community at Lamar University. Whether it is through academics or extracurricular activities, you will find a vibrant and welcoming atmosphere to students from all over the world.

Lamar University hosts dozens of clubs, organizations, professional societies, and interest groups. If you are looking to add to your professional resume, join like-minded individuals, or just find friends with similar interests, Lamar University has something for you.

Outside the classroom and laboratories, students have access to multiple resources to enhance the collegiate experience. From state-of-the-art dormatories to a 130,000 square foot recreational center to an eight-floor library, there is never a shortage of activities. As a student, you have the option to create your own path with endless opportunities at your disposal.

Sujay Mahale



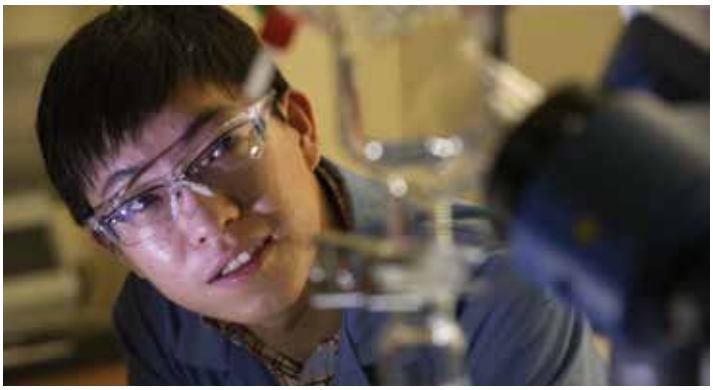
Hometown | Mumbai, India

Major | D.E. Industrial Engineering

"Before applying to Lamar, I had the opportunity to visit the campus and check some of the research labs that the Industrial Engineering department housed. I was in total awe of the machining lab. With it's vicinity to the ExxonMobil Refinery, the Port of Beaumont and other major petrochemical companies in the Golden Triangle area, I knew I could not find a better place to take the next journey in my life."

Dan F. Smith Department of Chemical Engineering

Chair: Dr. Thomas C. Ho



Faculty & Research

- Tracy Benson (Ph.D., Mississippi State University)
  Catalysis & Reaction Engineering; Carbon Dioxide Sequestration/Conversion; Biofuels
- Daniel Chen (Ph.D., Oklahoma State University)
  Abnormal Situation Management; Flare Modeling/Control
- David Cocke (Ph.D., Texas A&M University)
  Environmental Surface Chemistry and Catalysis; Advanced Materials; Biomedical Research and Capillary Electrophoresis; Advanced Electrochemistry and Environmental Sensors
- John Gossage (Ph.D., Illinois Institute of Technology)
  Simulation; Engineering Education
- James Henry (Ph.D., Texas A&M University)
  Biotechnology; Processing Engineering
- Thomas Ho (Ph.D., Kansas State University)
  Fluidization; Metal Emissions Control; Air Quality Modeling
- Clayton Jeffryes (Ph.D., Oregon State University)
  Bioprocessing; Nanobiomaterials
- Sidney Lin (Ph.D., University of Houston)
  Energy Ceramics; Solid Oxide Fuel Cell; Finite Element Analysis of Chemical Process
- Helen Lou (Ph.D., Wayne State University)
  Clean Combustion; Waste Management; Sustainable Process Engineering
- Srinivas Palanki (Ph.D., University of Michigan, Ann Arbor)
  Process Optimization and Control; Systems Engineering
- Peyton Richmond (Ph.D., Texas A&M University)
  Process Data Analytics; Safety and Reliability; Process Systems Engineering
- Rafael Tadmor (Ph.D., Weizmann Institute of Science)
  Surfaces and Interfaces; Wetting; Surface Forces
- Qiang Xu (Ph.D., Tsinghua University)
  Chemical Process Modeling, Simulation, Optimization, and Synthesis; Production Planning & Scheduling; Industrial Flare Minimization & Waste Minimization; Air-quality Modeling & Control

New Sustainable Approach with CO_2 Research

Dr. Tracy Benson, Associate Professor in the Dan F. Smith Department of Chemical Engineering, and his research team understand the need to mitigate the negative environmental impact of fossil fuel production and have found much success in research involving carbon capture, storage and utilization. Through his work, industry powerhouse companies will be able to utilize his findings to lessen the environmental impact of using fossil fuels.

Long term viability and sustained livelihoods of our planet's growing economies are at the forefront of today's technological advances. Fossil Fuels (i.e. crude oils, natural gas and coal) are expected to be the major sources of energy for the next several decades, mitigating the environmental impact of waste carbon dioxide has become the focal point of Dr. Benson's research platform. The research team seeks to develop economical solutions to engage both Carbon Capture & Storage (CCS) and Carbon Utilization (CU) technologies.

Through a collaborative partnership with the University of Texas at Austin, geologic research revealed subsurface stratigraphy of onshore and offshore areas in the Gulf of Mexico with extensive seals that could permanently isolate carbon dioxide. Current CCS work includes the equation of state analysis to determine permeability and diffusivity for deep well injection for supercritical carbon dioxide. In addition to storage, deep well injection of waste carbon dioxide is used in Enhanced Oil Recovery, a method used to push subsurface crude oil through bedrock to oil production wells.

Dr. Benson's research investigates the use of tri-reforming and low-temperature photocatalytic conversion of carbon dioxide to useful fuels and chemicals. Both technologies breakdown carbon dioxide to carbon monoxide using methane and water for a hydrogen source to produce synthesis gas (i.e. carbon monoxide and dihydrogen). Synthesis gas, a feedstock for Fischer – Tropsch processes, can then be converted to long-chain hydrocarbons (i.e. gasoline, kerosene and diesel) and to long-chain alcohols.

Utilizing the information found through CCS and UC technologies, Dr. Benson and the collaborative team are discovering new information to assist in carbon capture, storage and utilization. These sustainable methods will continue to improve along with emissions standards and increase the profitability model for local and global industries.

Yiling Xu

Hometown | Yunnan Province, China

Major | Ph.D Chemical Engineering

"The College of Engineering has given me various opportunities to interact with industrial professionals to learn and prepare myself for entering the industry. Lamar has already helped me build my professional experience, preparing me for a better future."

Department of Civil and Environmental Engineering

Chair: Dr. Liv Haselbach

Faculty & Research

- Nicholas Brake (Ph.D., Michigan State University)
  Analysis and Design of Concrete Pavements; Fatigue and Fracture Properties of Cementitious Composites; Development and Characterization of Sustainable Infrastructure Materials
- Liv Haselbach (Ph.D., University of Connecticut)
  Sustainable Development, Permeable Pavements, Environmental Life Cycle Assessment, Sustainability
- Mien Jao (Ph.D., Pennsylvania State University)
  Soil Evaluation and Stabilization; Foundation/Pile/Wall System Evaluation; Numerical Modeling in Geotechnical Engineering
- Jerry Lin (Ph.D., University of Cincinnati)
  Fate and Transport of Pollutants; Water and Waste Water Engineering; Water-Energy-Food (WEF) Nexus
- Qin Qian (Ph.D., University of Minnesota)
  Environmental Hydrodynamics; Water Quality Modeling and Solute Transport Processes in Lakes, Streams and Groundwater; Water Resource Monitoring and Management
- Thinesh Selvaratnam (Ph.D., New Mexico State University)
  Energy Positive Domestic Wastewater Treatment; Bio-remediation of Various Industrial Wastewaters; Water Treatment and Testing Systems for Emergencies; Food-Water-Environment Nexus
- Xing Wu (Ph.D., Northwestern University)
  Transportation System Analysis; GIS Applications in Transportation; Waterway Safety; Electric Vehicles
- Robert Yuan (Ph.D., University of Illinois, Urbana/Champaign)
  Fiber-Reinforced Polymer Composites, Experimental Mechanics
- Renzun Zhao (Ph.D., Virginia Polytechnic Institute and State University)
  Water Quality Monitoring; Solid and Hazardous Waste Mitigation; Nutrient-Water-Energy Nexus; Fate and Transport of Refractory Organic Contaminants; Sustainability

Pervious Concrete Research to Enhance Urban Atmosphere

Pervious concrete is a special type of concrete made with few or no fine aggregates, making it a permeable material. In an urban setting, where roads, buildings, parking lots and sidewalks are almost 100% impermeable, the use of pervious concrete as a pavement surface course allows water to seep through it, reduces runoff, alleviates flooding and brings many other benefits, such as recharging groundwater and the reduction of urban heat islands. Because of these benefits, it is considered a Best Management Practice (BMP) by the Environmental Protection Agency (EPA) and its application can contribute to Leadership in Energy and Environmental Design (LEED) certification.

When pervious concrete pavements are installed in cold climate areas, they are subjected to deicing chemicals and freeze-thaw cycles, as with any other kind of pavement. However, during severe winters, there is evidence this material can be more heavily affected than traditional concrete pavement. This is due to the porous structure of the pervious concrete that allows the deicing chemicals to accumulate and infiltrated precipitation to freeze-thaw within its structure. It is not clear whether the deicing chemicals, the freeze-thaw cycles or a combination of both are responsible for the failure of pervious concrete in cold climates.

Dr. Liv Haselbach's research aims to further investigate the behavior of the pervious concrete when subjected to these conditions. To better understand how deicers can chemically and/or physically affect the cement paste matrix, aggregate bonding, pavement durability and strength, a series of laboratory experiments must be conducted using various deicing chemicals including: include sodium chloride, magnesium chloride and calcium chloride.

A better understanding of the behavior of pervious concrete when subjected to severe winters is crucial in order for the industry to design and install pervious concrete that is more resistant to wintertime maintenance practices. Dr. Haselbach's research will suggest a testing procedure to compare various mix designs for their resistance to deicing degradation. This will enable the industry to more efficiently and economically implement the installation of this alternative pavement, promoting low-impact sustainable development.

Stefanie Plunkett

Hometown | Friendswood, Texas, USA

Major | M.S. Environmental Engineering

"I chose Lamar University based upon the coursework in the program, affordability, and research options offered. I really enjoy the flexibility of the instructors and the small class sizes."

Phillip M. Drayer Department of Electrical Engineering

Chair: Dr. Harley R. Myler

Faculty & Research

- Hussein Almallahi (M.E., New Mexico State University)
  Engineering Education
- Reza Barzegaran (Ph.D., Florida International University)
  Design, Control and Condition Monitoring of Electrical Machines; Alternator & Power System Components
- Xiaofan He (Ph.D. North Carolina State University)
  Security of Information/Communication Networks; Game/Learning Theory
- Koji Hirano (D.E., Lamar University)
  Engineering Education
- Harley Myler (Ph.D.,New Mexico State University)
  Telecommunications; Image & Video Processing; Embedded Systems
- Ganesha N. Reddy (Ph.D., Indian Institute of Technology)
  Renewable Energy Sources; Electric Vehicle Design
- Selahattin Sayil (Ph.D., Vanderbilt University)
  Radiation Effects Modeling & Hardening of Microchips, Low-Power Design & Reliability Analysis
- Gleb Tcheslavski (Ph.D., Virginia Tech)
  Digital Signal/Image Processing; Biomedical Signal Analysis.
- Cagatay Tokgoz (Ph.D., Ohio State University)
  Computational Electromagnetics; RF and Microwave Modeling and Characterization of Electrical Faults, Presence and Vital Sign Detection, Antenna Design for RF
- Ruhai Wang (Ph.D., New Mexico State University)
  Cyberphysical Security; Wireless Sensor Networks, Satellite and Space Communications
- Hassan Zargarzadeh (Ph.D., Missouri University of Science and Technology)
  Nonlinear and Complex Systems; Adaptive Control; Optimal Control; Robotics and Mechatronics; Power Electronics Control Systems

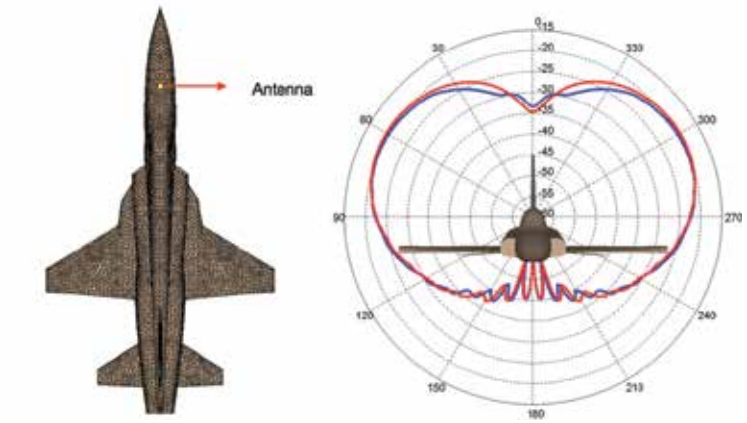
Electromagnetic Research Assists U.S. Air Force

Dr. Cagatay Tokgoz was recently awarded a Faculty Fellowship from the United States Air Force Research Laboratory (AFRL) where he spent twelve weeks over the summer of 2017 conducting research into antenna placement for aircraft. Through his fellowship, Dr. Tokgoz developed efficient ray tracing-based techniques and electromagnetic solutions and applied them to representative computer models of aircraft platforms to predict co-site interference between antennas on the same platform.

In the area of computational electromagnetics, Dr. Tokgoz is one of a handful of researchers in the United States whose expertise resides in the development and application of efficient numerical techniques and solutions for antenna placement on large structures such as aircraft. Because of his expertise in this area, Dr. Tokgoz has attracted strong interest from the CREATE-RF, a program funded by the Department of Defense and ran through AFRL.

"Numerous antennas with various communication purposes are installed on a typical modern aircraft. These airborne antennas operate and communicate independently without being affected by the aircraft and each other as little as possible. The careful placement of these antennae becomes extremely crucial for antenna-platform interactions and co-site interference," says Tokgoz.

The techniques and solutions developed during the fellowship have been planned to be integrated into the SENTRi software being developed by the CREATE-RF team. New capabilities will greatly assist the United States Air Force in finding optimum placement of antennas on airborne platforms of aircraft and missiles to minimize the co-site interference between the two. "This collaboration with the AFRL has created many opportunities for the great work that they do and opened many opportunities for future collaboration with Lamar University and the College of Engineering."



Srikar Venneti

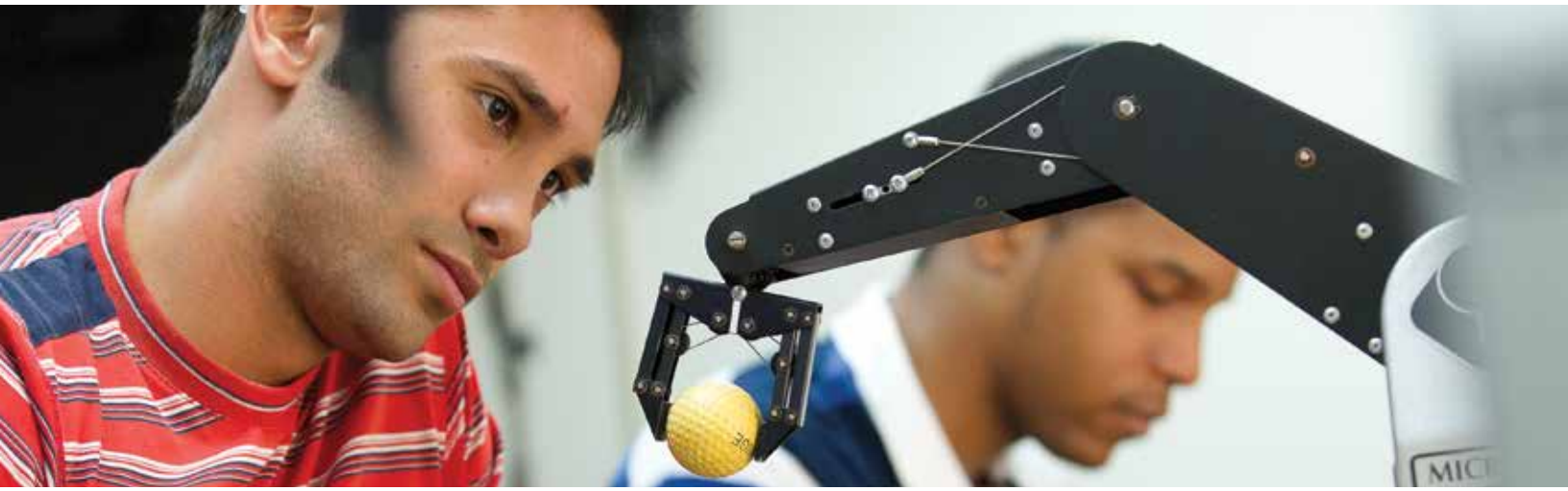
Hometown | Andhra Pradesh, India

Major | M.E.S. Electrical Engineering

"My professors have given me the practical knowledge and skills that translate to industry needs, thus enhancing my resume and preparing me for my professional career. "

Department of Industrial Engineering

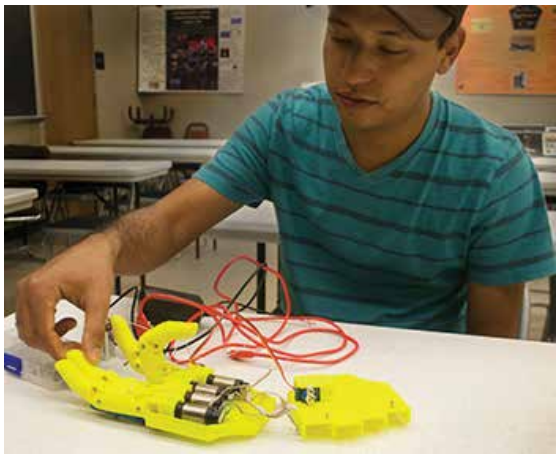
Chair: Dr. Brian Craig



Faculty & Research

- Jaeyoung Cho (Ph.D., University of Houston)
  Maritime Transportation & Logistics; Manned-Unmanned Systems Integration; Crisis/Disruption Management.
- Brian Craig (Ph.D., Texas A&M University)
  Human Factors, Ergonomics and Safety Engineering
- James Curry (Ph.D., Texas A&M University)
  Supply Chain Management; Optimization; Software Development; Natural Language Generation
- Maryam Hamidi (Ph.D., University of Arizona)
  Reliability; Data Analysis; Maintenance & Inventory Optimization; Game Theory; Warranty, Lease Contracts
- Yueqing Li (Ph.D., North Carolina State University)
  Human Factor/Ergonomics; Human-Computer Interaction; Neuroergonomics; Data Mining
- Xinyu Liu (Ph.D., University of Illinois at Urbana-Champaign)
  Micro-manufacturing; Laser Machining; Digital Manufacturing; Machine Design
- Alberto Marquez (Ph.D., Arizona State University)
  Heuristics and Metaheuristics; Decision Support Systems; System Modeling and Optimization.
- Berna Tokgoz (Ph.D., Old Dominion University)
  Risk Management; Resilience Engineering; Engineering Management; Systems Engineering
- Ezra Wari (D.E., Lamar University)
  Optimization, Production Scheduling, Simulation, Manufacturing and Quality
- Yisha Xiang (Ph.D., University of Arkansas)
  Reliability and Maintenance; Production and Inventory Management.
- Victor Zaloom (Ph.D., University of Houston)
  Risk Analysis, Quality Improvement, and Financial Engineering
- Weihang Zhu (Ph.D., North Carolina State University)
  Computational Optimization; Meta-Heuristics; Modeling and Simulation; Haptics; Computer Aided Design and Manufacturing (CAD/CAM), Engineering Education

Rehabilitation Research Leads to New Affordable Discoveries



Dr. Yueqing Li, Assistant Professor of Industrial Engineering, and his team of researchers are conducting research exploring various physiological signals (e.g., EEG, EMG, ECG, EOG, oxygen consumption, respiration, heartbeat, body temperature, etc.) to design ergonomic interventions for reducing MSD and fatigue, enhance rehabilitation, and improve task-performance during work.

With many underlying projects, Dr. Li is kept busy in the Human Factors and Ergonomics Lab, which looks like a cross between a gym and laboratory. One of Dr. Li's research projects is to develop a robotic exoskeleton for rehabilitation for stroke patients and individuals with neurological diseases. Millions of people around the world suffer from loss of motor skills due to the neurological diseases. In United States, neurological disease is the leading cause of motor disability. Additionally, more than 750,000 people in United States and 15 million people around the world suffer from a stroke each year with approximately two-thirds survive to require rehabilitation. "Many patients have the potential to recover motor control, but missed opportunities occur due to either ineffective rehabilitation strategy or equipment is too expensive for the patient," says Li. "Our robotics exoskeleton can increase independence during therapy, reduce the work of caregivers and could potentially be a much more affordable option for patients."

Li's research integrates robotics, brain-computer interface (BCI), EEG, EMG and other physiological signals by using 3D printing technology. The research group is developing the first low-cost system for patient therapy both in clinic and at home. The group also plans to develop an adaptive control algorithm to enhance rehabilitation. In a collaboration between Lamar University, Texas A&M University and Tarleton State University, Li's research group hopes to advance the future of rehabilitation. "These advances we are making will greatly increase the independence of those with motor disabilities and propose a control mechanism when normal pathway of communication or control does not work."

Behnam Rahimikelarijani

Hometown | Sary, Iran

Major | D.E. Industrial Engineering

"What drew me to Lamar University was the relationship between LU and local industries. This has given me the opportunity to enhance my job readiness by providing funding for research opportunities. Technology in the classroom allows me to easily manage my time between research and study. "

Department of Mechanical Engineering

Chair: Dr. Hsing-Wei Chu

Faculty & Research

- Kendrick Aung (Ph.D., University of Michigan)
  Simulation and Optimization of Energy and Renewable Energy Systems; Engineering Education
- Ali Beheshti (Ph.D., Louisiana State University)
  Tribology; Coatings and Thin Films Failure Analysis; Rotating Machinery
- Hsing-Wei Chu (Ph.D., University of Texas at Austin)
  Network Flow Programming; ABaCAS
- Keivan Davami (Ph.D., POSTECH University, South Korea)
  Micro- and Nanomanufacturing; Micro- and Nanomechanics; Metamaterials
- Xuejun Fan (Ph.D., Tsinghua University)
  Characterization, Modeling and Reliability of Materials; Components and Systems in Micro- and Opto- Electronics Manufacturing and Packaging
- Ramesh Guduru (Ph.D., Arizona State University)
  Nanomaterials; Energy Storage and Energy Harvesting; Corrosion and Failure Analysis of Materials; Structure-Property-Correlation Studies; CO2 Sequestration
- Ping He (Ph.D., Clemson University)
  Supercritical Fluids; Heavy Crude Oil Upgrading; Bio-printing; Detonation Engine
- Xianchang Li (Ph.D., Clemson University)
  Thermal System Analysis and Optimization; Gas Turbine Cooling and Heat Transfer
- Chun-Wei Yao (Ph.D., Texas A&M University)
  Anti-Corrosion & Anti-Fouling Coating; Water Harvesting; Two-Phase Cooling Technology
- Jenny Zhou (Ph.D., University of Maryland)
  Plant Biomechanics; Dynamic Responses and Vibrations of Micro-electronic Systems

Collaboration Hopes to Increase Efficiency in Mechanical Reactors

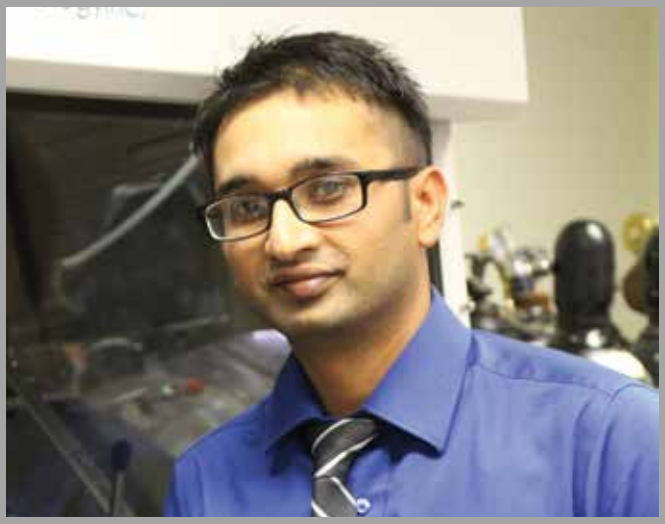
In collaboration with Texas A&M and Purdue University, Dr. Ali Beheshti, Assistant Professor in the Department of Mechanical Engineering, has been granted $773,000 funding support from the U.S. Department of Energy to study tribological performance of Nickel alloys in a helium environment. The results of this project will enhance very high-temperature gas cooled reactors efficiency through obtaining fundamental knowledge of failure mechanisms and tribological response in high-temperature materials and developing predictive models.

Operation at high temperatures is critical for power plants and nuclear reactors, resulting in substantial thermal efficiency. Nickel alloys are principle candidates in high or very high temperature gas cooled reactors with outlet temperatures of 700-950°C. Understanding and optimizing mechanical and tribological response of high-temperature materials, particularly Nickel alloys, used in very high-temperature gas cooled reactors is crucial to increase durability, operational reliability, decrease exchange cost and understanding thermal effects on mechanical response.

"Our modeling concentrates on hot nano-indentation and scratch to estimate mechanical properties of the bulk material and potential thin oxide film. In addition, novel modeling of friction considering surface nano or micro features, creep and temperature fluctuations will be performed," says Beheshti.

By September 2019, the collaboration hopes to obtain fundamental knowledge of failure mechanisms and tribological response in these materials and establish predictive models. Specifically, knowledge of friction coefficient behavior, surface wear, fretting, and self-welding leading to interface failures, as a function of aging time, dwell time, temperature, speed, load, gas composition, and surface roughness will be established for each material pair in the presence of air, helium and helium with impurities. The research hopes to uncover and suggest alternative solutions to mitigate tribological problems with Nickel alloys under high and very high temperature gas cooled reactors conditions by investigating different practical approaches such as optimizing design, operating conditions, and surface modifications.

Ketan Solanki

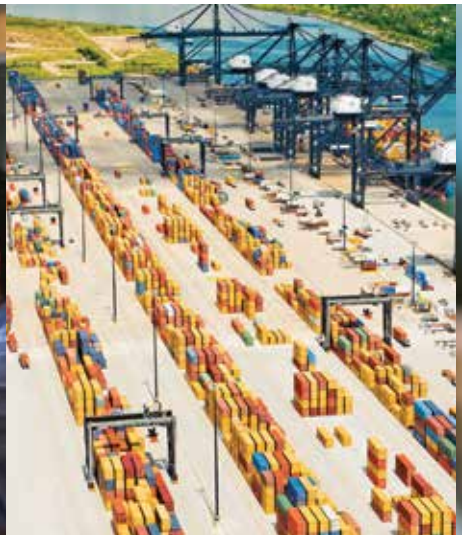


Hometown | Pune, India

Major | M.S. Mechanical Engineering

"I chose Lamar University because I have the freedom to use my creativity in my research. The faculty is extremely supportive and works tirelessly to ensure my success as a student and researcher."

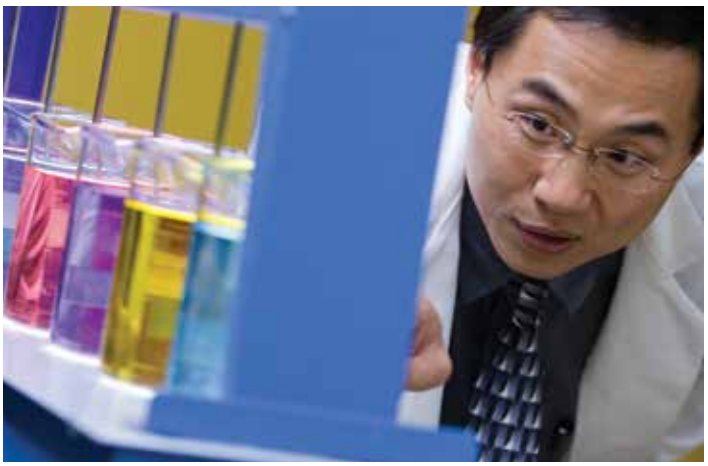
College of Engineering Research Centers


The Center for Advances in Water and Air Quality

Director: Dr. Jerry Lin

CAWAQ promotes understanding of critical environmental issues and develops solutions for mitigating challenges in water and air quality faced by industries and the global community through research, educational programs, and outreach. CAWAQ research teams innovate nanomaterials for water purification and freshwater harvesting, advance algaculture for water sustainability and renewable energy recovery, develop clean emission technologies and policy making tools for integrated air quality management, biologically convert industrial residual streams for resource recovery, deploy remotely operated vehicles for invasive species detection and control, assess the fate and transport of pollutants in the environment, and create STEM (science, technology, engineering and mathematics) programs in coast resilience, water quality and air quality. These interdisciplinary research projects are funded by the State of Texas, federal grant agencies and industry. Research opportunities are available through a consortium of principle investigators.




The Center for Advances in Port Management

Director: Mr. Erik Stromberg

CAPM implements a leading-edge port and marine terminal-related research program fully responsive to, and anticipatory of, industry needs and faculty capabilities. Examples of Center's research include optimization analysis and recommendations to improve the efficiency of chemical tanker terminal routings within ship channels, minimizing construction/demolition impact of bridge and roadway over marine transportation waterway through model simulation, microbial detection of invasive species and contaminants in ballast water to conform with International Maritime Organization ballast water regulations efficiently and cost-effectively, marine terminal operations safety and productivity analysis for major ports, and surface coating technology providing anti-corrosion and anti-bio-fouling properties. Interdisciplinary research projects are funded by the State of Texas.

Texas Air Research Center/Texas Hazardous Waste Research Center

Director: Dr. Thomas Ho

TARC and THWRC manage integrated research programs in two niche areas: (1) synthesize scientific and modeling data regarding Texas air quality to facilitate decision-making for policy makers, and (2) innovate the technologies for the mitigation and remediation of environmental dispersion of hazardous wastes. Current projects include building a database for Texas air quality, transport and transformation of air pollutants, flare minimization and optimization of industrial flaring operation, formulation of emission reduction plans through air quality modeling, life cycle assessment for minimizing waste generation, and advancement of hazardous waste management practice. Interdisciplinary research projects are funded by the State of Texas.

Visit engineering.lamar.edu/researchcenters for more information

College of Engineering
LAMAR UNIVERSITY

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