College of
ENGINEERING & COMPUTING

Department of Mechanical and Materials Engineering

RESEARCH

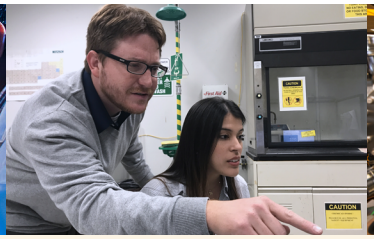
The Department of Mechanical and Materials Engineering (MME) conducts groundbreaking research in several areas – energy-based materials such as supercapcitors and batteries, high-pressure physics; nanocomposites, coatings, in-situ mechanics, and multi-objective optimization to design new alloys and for biomedical applications. The department is also engaged in research in mechatronics, manufacturing, thermo-fluids and fluid-structure interaction. The research conducted by MME faculty is supported by various federal agencies such as National Science Foundation (NSF), Department of Energy (DOE), Office of Naval Research (ONR), Air Force Office of Scientific Research (AFOSR), and Army Research Lab (ARL) as well as by private industries.

FACULTY

Several faculty members have won numerous awards, including the National Science Foundation CAREER Award, DARPA Young Faculty Award and FIU President's World Ahead Faculty Award. The department also has fellows of the American Society of Mechanical Engineers (ASME), American Society of Mechanical Engineers (ASM) and American Association for the Advancement of Science (AAAS). In addition, MME faculty has won several best paper awards. A few of the faculty are highly cited in their research areas with H-index greater than 45. MME faculty serve as editors and associate editors of several leading journals in their fields. In the last 12 months, MME faculty have been awarded three patents and several new patents have been filed.

PARTNERSHIPS

The department and its faculty have established relationships with several organizations, among them, the NSF-funded CELL-MET ERC, in partnership with Boston University and University of Michigan. Andres Tremante of MME leads the Center for Diversity, which has a partnership with several local high schools for outreach activities.The various partnerships benefit the university as well as the MME department by providing enhanced research and education experiences for our graduate and undergraduate students. They also provide opportunities for faculty and students to communicate with peers at other institutions and learn from each other and establish constructive long-term relationships."


POINTS OF PRIDE

Undergraduate students* have grown by 235% in the last five years

Several student chapters and clubs Aero Club, SAE, Mini Baja, ASME, Materials Advantage

*Accountability.fiu.edu

GRADUATE DEGREES OFFERED

- M.S. Materials Science and Engineering
- M.S. Mechanical Engineering
- Ph.D. Materials Science and Engineering
- Ph.D. Mechanical Engineering

RESEARCH HIGHLIGHTS

- Micro and nanotechnology
- Study of materials at extreme conditions
- Electronic materials and ceramics
- Multidisciplinary computational analysis
- Thermal/fluid/energy sciences
- Computational fluid dynamics
- Nanostructured materials
- Nanofabrication and nanosensors
- Smart manufacturing

GRADUATE RESEARCH OPPORTUNITIES

The Mechanical and Materials Department's master's and Ph.D. graduate programs cover a range of disciplines including fluid/thermal sciences, energy systems, materials design and processing, nanotechnology, robotics, manufacturing, and multidisciplinary computational design and optimization with research opportunities available in each discipline under our faculty.

FACILITIES

- Advanced Materials Engineering Research Institute (AMERI)
- Center for Study of Materials at Extreme Conditions (CeSMEC)
- Multidisciplinary Analysis, Inverse Design, Robust Optimization and Control Laboratory (MAIDROC)
- Plasma Forming Laboratory (PFL)
- Energy Materials and Biological Sensors Laboratory

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