



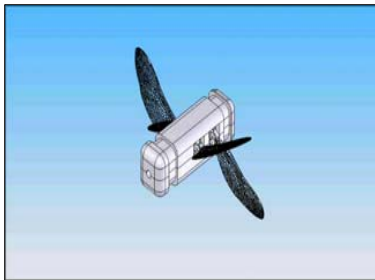
Joshi Research Center



Scanning Electron Microscope



Fritz and Dolores Russ Engineering Center



Design of an Ornithopter, a micro air vehicle with exceptional maneuverability capabilities. The Ornithopter was a graduate project under the advisement of Drs. Dong and Slater.

## Research Centers and Facilities

Our graduate students have access to many modern facilities including laboratories, classrooms and computer systems. Computational facilities include high end workstations and a number of PC classes designed for high performance computing. Access is also available to the Ohio Supercomputer through the Ohio Academic and Research Network. Our graduate students utilize equipment such as the Scanning Electron Microscope (SEM) and the X-Ray Photoelectron Spectroscopy. Our lab equipment is continually updated and new equipment is added to ensure our students remain competitive on a national level.

The Mechanical and Materials Engineering department at Wright State is home to cutting edge research and state-of-the-art research facilities including:

- CAPEC– Center for Advanced Power and Energy Conversion
- Center for High Performance Computing
- Center for Advanced Manufacturing Technology
- Center for Nanoscale Multifunctional Materials
- Computational Design and Optimization Center
- Material Manufacturing

## How to Apply

Any student seeking admission must complete an application form as well as pay a nonrefundable application fee. Applications can be submitted online or in paper form. Any questions regarding admission status should go through the School of Graduate Studies:

School of Graduate Studies  
3640 Colonel Glenn Highway  
Dayton, OH 45435  
Phone: (937) 775-2976

International students should contact the University Center for International Education for application information:

University Center for International Education  
3640 Colonel Glenn Highway  
Dayton, OH 45435  
Phone: (937) 775-5745

# MECHANICAL AND MATERIALS ENGINEERING

## GRADUATE STUDIES



# WRIGHT STATE UNIVERSITY

Mechanical and Materials Engineering  
3640 Colonel Glenn Highway  
Dayton, OH 45435

(937) 775-5040

Fax: (937) 775-5082

E-mail: [me-dept@wright.edu](mailto:me-dept@wright.edu)

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## Degrees Offered

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- Master's of Science with a focus in Mechanical Engineering
- Master's of Science with a focus in Materials Science and Engineering
- Master's of Science with a focus in Renewable and Clean Energy
- The College of Engineering and Computer Science offers an interdisciplinary Ph. D. program with focus areas in
  - Computational Design & Optimization
  - Controls & Robotics
  - Materials & Nanotechnology

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## DAGSI

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Wright State is a member of the Dayton Area Graduate Studies Institute (DAGSI). DAGSI links Wright State University, the University of Dayton, and the Air Force Institute of Technology. Through DAGSI students have more resources available to them, including faculty, facilities, and equipment. DAGSI also offers students funding opportunities through tuition scholarships as well as tuition plus assistantship scholarships. DAGSI offers scholarships to both international students, as well as students who are U.S. citizens. Eligible students may receive a scholarship funding up to the amount of \$28,000. DAGSI scholarships are given on a competitive basis.

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## Available Funding

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Teaching assistantships are available on a competitive basis for students who can demonstrate a strong academic base and good communications skills. Research assistantships are available from sponsored research projects. Students interested in a research assistantship should consult faculty members for availability. Students with an interest in an assistantship should indicate their interest at time of application. Funding is also available for students through co-op.

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## Faculty Research

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- **Dr. George Huang P.E., Professor and Chair-** Computational fluid dynamics, heat and mass transfer, high performance computations, modeling, designs and understanding of complex transport processes
- **Dr. Maher Amer, Associate Professor, Materials Science-** Deformation and micromechanics of multi-phase and functionally gradient materials using micro-Raman spectroscopy, nanostructured sensors, molecular simulation of nanomaterials
- **Dr. Haibo Dong, Assistant Professor, Mechanical Engineering-** Bio-inspired flow, computational fluid dynamics, aerodynamics, biomimetics, high performance computing, fluid-structure interaction
- **Dr. Amir Farajian, Assistant Professor, Materials Science-** Computational nanoscience with an emphasis on transport in quasi-one-dimensional systems, nanotubes and nanowires, nanoelectromechanical devices, sensors, nanostructured composites and activated processes
- **Dr. Ramana Grandhi, Distinguished Professor, Mechanical Engineering-** Multidisciplinary analysis and optimization, computational structural mechanics, probabilistic mechanics, metal forming, and finite element methods
- **Dr. Hong Huang, Assistant Professor, Materials Science-** Nanostructured materials for ionic-conducting devices including fuel cells, batteries, supercapacitors; understanding ionic transport and electrochemical kinetics in electrochemical energy conversion and storage systems
- **Dr. Nathan Klingbeil, Associate Professor, Mechanical Engineering-** Solid mechanics, with particular emphasis on fracture mechanics, the mechanics of bonded interfaces and fatigue crack growth
- **Dr. Junghsen Lieh, Associate Professor, Mechanical Engineering-** Intelligent control systems, multibody nonlinear dynamics, vehicle engineering, biomechanics, finite element analysis, and metal forming
- **Dr. James Menart, Associate Professor, Mechanical Engineering-** Heat transfer and plasma technology, both experimental and numerical investigations

- **Dr. Sharmila Mukhopadhyay, Professor, Materials Science-** Materials for nanotechnology, surface and interface phenomena, and multidisciplinary materials education
  - **Dr. Ravi Penmetsa, Assistant Professor, Mechanical Engineering-** Uncertainty quantification, robust design, design optimization, and finite element methods
  - **Dr. Joseph Shang, Research Professor-** Numerical simulation of plasma actuators for flow control, plasmadynamics of weakly ionized gas, and research for ablation phenomenon during the reentry phase of interplanetary flight
  - **Dr. Joseph Slater P.E., Associate Professor, Mechanical Engineering-** Modeling, analysis, and control of dynamic systems, thermal control system optimization, system identification, smart structures, health monitoring
  - **Dr. Raghavan Srinivasan, Professor, Materials Science-** Finite-element and physical modeling of deformation processes and stochastic modeling of phase transformation
  - **Dr. Scott Thomas, Associate Professor, Mechanical Engineering-** Thermal management of Micro-Electro-Mechanical Systems (MEMS), heat pipes applied to electric aircraft actuators, and liquid flow in axial grooves with countercurrent vapor flow
  - **Dr. Vipperla Venkayya, Research Professor-** Mathematical modeling of aerospace structures, research related to structures subjected to static, dynamic, thermal and aeroelastic loadings
  - **Dr. Mitch Wolff, Professor, Mechanical Engineering-** Propulsion, turbo machinery, computational fluid dynamics, unsteady aerodynamics, instrumentation and flow measurement, forced response, aeromechanical design and test systems, separated flows, and wake modeling
  - **Dr. Daniel Young P.E., Assistant Professor, Materials Science-** Laser forward transfer phenomena as related to biomaterials, extrusion of continuous oxide and polymer fiber heterostructures and nanochannel materials
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