

Faculty Research Expertise	
Automotive Systems:	
Combustion:	Dr. Majumdar
Control:	Dr. Coller
Mechanisms:	Dr. Fallahi, Dr. Song
Noise and Vibration:	Dr. Gupta
Simulation of automobile performance:	Dr. Coller, Dr. Gupta, Dr. Kim
Compact torque converters, high thermal capacity wet clutches:	Dr. Payvar
Control Systems:	
Control theory, nonlinear control for jet engine:	Dr. Coller, Dr. Kim
Computational Methods:	
Computational methods for engineering:	Dr. Kim, Dr. Majumdar, Dr. Short
Computational Simulation:	Dr. Coller
Artificial neural networks:	Dr. Kim
Computer-Aided Design and Manufacturing (CAD/CAM)	
CAD/CAM software applications:	Dr. Fallahi, Dr. Gau, Dr. Kim, Dr. Song
Finite-element analysis:	Dr. Fallahi, Dr. Gau, Dr. Gupta, Dr. Kim, Dr. Majumdar, Dr. Short, Dr. Song
Laser cutting:	Dr. Kim, Dr. Majumdar
Rapid prototyping:	Dr. Fallahi, Dr. Kim
Metal forming:	Dr. Gau
Virtual reality:	Dr. Kim
Environmental Engineering: Dr. Bose, Dr. Kostic	
Fuel Cells:	
Membrane research:	Dr. Bose
Fuel cell energy systems:	Dr. Majumdar
Fuel cell car:	Dr. Bose, Dr. Majumdar, Dr. Payvar, Dr. Kim
Mechanics:	
Kinematics:	Dr. Song
Dynamics:	Dr. Fallahi, Dr. Gupta, Dr. Kim, Dr. Song
Flewible body dynamics:	Dr. Fallahi
Fluid mechanics: Dr. Kostic, Dr. Majumdar, Dr. Payvar	
Heating, Ventilation, and Air Conditioning (HVAC)	

HVAC:	Dr. Majumdar, Dr. Kim
Refrigerant heat transfer:	Dr. Payvar
Manufacturing:	
Laser Manufacturing:	Dr. Kim, Dr. Majumdar
NC machining:	Dr. Kim
Materials Processing:	Dr. Gau, Dr. Ganesan
Materials: Dr. Short	
Mechanisms: Dr. Fallahi, Dr. Song	
Nanotechnology:	
Diamond photo cells:	Dr. Song
Nano-fluid:	Dr. Kostic
Nano-scale heat transfer and fluid flow:	Dr. Majumdar
Robotics/Automation:	
Factory automation:	Dr. Song
Pieso-electric actuators:	Dr. Fallahi
Robot control:	Dr. Coller
Robot kinematics and dynamics:	Dr. Song
Walking Machines:	Dr. Song
Thermodynamics and Heat Transfer: Dr. Kostic, Dr. Majumdar, Dr. Payvar, Dr. Kim	
Vibrations:	
Active vibration control:	Dr. Gupta
Fracture diagnosis by vibrations:	Dr. Gupta, Dr. Short
Vibration theories:	Dr. Gupta, Dr. Kim