



GRADUATE PROGRAM RESEARCH FOCUS AREAS



ENERGY SCIENCE & ENGINEERING

fuel science, advanced conversion methods, carbon capture, solar ecology, materials for energy, electrochemistry conversion, fuel cells and batteries, solar systems engineering, biofuels, catalysis



ENERGY SYSTEMS ENGINEERING & ENERGY ECONOMICS

electricity and natural gas markets, grid optimization and simulation



PETROLEUM/GAS & SUBSURFACE ENGINEERING

unconventional production, stimulation, reservoir characterization and simulation, digital rock physics, multiphase flow & transport phenomena in porous media, subsurface coupled processes



**MINING, INDUSTRIAL SAFETY & HEALTH, AND
GEOENVIRONMENTAL ENGINEERING**

ground control, ventilation, dynamic optimization of production systems, mine electrical systems, occupational safety & health systems, exposure assessment, risk characterization & mitigation, regulatory & minerals policy analysis, coal preparation, mineral processing, rare earth extraction from secondary sources, environmental management, pollution control, waste management and environmental sustainability



WHY EME @ PENN STATE?

The graduate program in EME reflects the diversity of our research by providing a flexible program for M.S. and Ph.D. degrees that facilitates the specialization in one area to become a leading-edge researcher while at the same time developing the complementary breadth across scientific disciplines and engineering technologies necessary to become a next generation leader in academia or industry.

Graduate research and education utilizes our many state-of-the-art research labs, and characterization and computational facilities. Research programs and projects are generally supported by centers and institutes at Penn State, including the EMS Energy Institute, the Earth and Environmental Systems Institute, the Institutes for Energy and the Environment, and Institute for Natural Gas Research. Many faculty are affiliated with and collaborate closely with other departments across Penn State, such as Chemical Engineering, Industrial and Manufacturing Engineering, Geosciences, Statistics, and Agricultural and Environmental Resource Economics.

If you are looking for a graduate education grounded in rigorous science, engineering, and economics, not limited by historical boundaries around disciplines, and want to emerge as a leader equipped with tools and skills to tackle big energy and resource challenges in the 21st Century, the EME graduate program may be the place for you.

COMPANIES WHO EMPLOY OUR GRADS

ADNOC	Compass Minerals	Halliburton	Energy Laboratory	Sasol	
Anadarko	ConocoPhillips	Hess	New York Independent	Schlumberger	
Aramco	Consol Energy	Inpetro Energy	System Operator	Seneca Resources	
Albemarle	Cummins	IHRDC	Newfield	Shell	
Argonne National Laboratory	Dalian University of Technology	Intel	Newmont Mining Corporation	South China University	of Economic Geology
Baker Hughes	Devon	Johnson Matthey	Noble Energy	of Technology	University of Utah
Bettis Atomic Power Laboratory	Dong-A University, Korea	Kuwait Oil Company	PJM Interconnection	Stanford	USGS
Bloomenergy	Ehime University, Japan	Lehigh Hanson	Petramina	Turkish Petroleum Company	Virginia Polytechnic
BP	Environment Canada	Marathon	Petroleum Development	U.S. Department of Energy	Institute and
Charles River Associates	Equitable	Monitoring Analytics	Oman	U.S. National Institute for	State University
Chesapeake	ExxonMobil	National Energy	Petronas	Occupational Safety and Health	Wuhan University of
Chevron	Ford Corporation	Technology Laboratory	PTT Thailand	University of Kentucky	Science and
China University of Petroleum	FuelCell Energy	National Fuel Gas	Qatar Oil and Gas	University of Texas at Austin	Technology, Wuhan,
CMG Oil & Gas	Golder Associates	National Renewable	Range Resources	University of Texas Bureau	China
					XTO Energy

www.eme.psu.edu/emegrad/apply