10 Things to know about the Texas A&M Energy Institute
The Texas A&M Energy Institute: Founded in 2009
History

- Texas A&M has worked in energy-related areas for more than a century and built tremendous capabilities in the area of energy technology and systems.

- Approved by the Board of Regents of the A&M System, The Texas A&M Energy Institute (EI) was founded in 2009, originally as the Texas A&M Energy Engineering Institute (EEI), part of the Texas A&M Engineering Experiment Station (TEES).

- Now, the Texas A&M Energy Institute is a university-wide institute at Texas A&M University and is a joint institute between Texas A&M University (under the Division of Research) and the Texas A&M Engineering Experiment Station (TEES).
Vision

The Texas A&M Energy Institute aims to:

- Transform the Energy Research Landscape
- Educate the Next Generation of Leaders in Energy, and
- Establish a Vibrant External Partnerships Program in Energy
A New Focus
and Direction
Professor E.N. Pistikopoulos

Recognitions and Honors

- Doctor Honoris Causa, University of Pannonia, Hungary, 2015
- Doctor Honoris Causa, University Politechnica of Bucarest, 2014
- Fellow of the Royal Academy of Engineering, UK, 2013
- AIChE Computing in Chemical Engineering Award, 2012
- MacRobert Award, Royal Academy of Engineering, 2007
- Queen’s Award for Excellence in Research & Technology Transfer, 2002

Professor E.N. (Stratos) Pistikopoulos
Director, Texas A&M Energy Institute
TEES Eminent Professor, Artie McFerrin Department of Chemical Engineering
Texas A&M University
Experienced Leadership
Executive Committee

M. Katherine Banks
Vice Chancellor of Engineering and National Laboratories; Director, Texas A&M Engineering Experiment Station

Mark A. Barteau
Vice President for Research

Valen E. Johnson
Dean, College of Science

Patrick Stover
Vice Chancellor and Dean for Agriculture and Life Sciences

Debbie Thomas
Dean, College of Geosciences
Faculty Affiliates

The Texas A&M Energy Institute partners with more than 280 Faculty Affiliates, representing nine colleges and schools, more than 20 Texas A&M University departments, two Texas A&M University branch campuses, and two Texas A&M University System member institutions.
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Vibrant External Partnerships
Vibrant External Partnerships

The Texas A&M Energy Institute focuses on establishing a vibrant interactive environment that brings together academia, government, and industry to discuss, address, and provide transformative solutions to energy challenges.
Transforming the Energy Research Landscape
10 Research Areas

- Fossil-based Technologies for Energy
- Renewable Technologies for Energy
- Geothermal and Hydropower-based Technologies for Energy
- Nuclear Energy Technologies
- Energy Storage
- Energy Efficiency
- Carbon Capture, Utilization, and Storage
- Multi-scale Analysis, Simulation, Synthesis, and Optimization of Energy Systems
- Energy Transmission
- Energy Policy, Law, Security, and Societal Impact

Interdisciplinary research program focuses on the four interacting Themes
The Giesecke Engineering Research Building (GERB) is home to staff, researchers, and Faculty Affiliates of the Texas A&M Energy Institute. Nanotechnology, Materials Science, and Computational Science research activities are conducted in the GERB, including researchers from the Departments of Chemical Engineering, Electrical and Computer Engineering, and Mechanical Engineering.
Programs for the World’s Future Leaders in Energy
Educating Leaders in Energy

Designed to create the next generation of leaders in energy, this program will target both students and professionals who want to be educated on the high-impact and interdisciplinary facets of the energy research landscape through quantitative analytical methods and multi-scale systems based approaches.

“Programs like this simply do not exist outside Texas A&M. By bringing together partners from a broad spectrum—including industry, government and public policy arenas—and providing intensive interactions with these graduate students, we are helping create cutting-edge solutions to some of today’s most pressing, global challenges related to economic stability, national security and other critical areas.”

Texas A&M University President Michael K. Young
A Holistic View of Energy

Offers a holistic view of the entire energy research landscape, and introduces students and professionals to a broad spectrum of important energy issues from energy technologies based on fossil and non-fossil resources, to sustainable energy technologies, as well as their interactions with energy economics, entrepreneurship, law, and policy.
An Innovative Program in Energy

The structure of the degree is based on non-overlapping modules, a distinguished seminar series, and a research thesis (Track 1 only).

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<th>Master of Science in Energy</th>
<th>Certificate in Energy</th>
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<tr>
<td><strong>Program Duration</strong></td>
<td>10 months (September 1 – June 30)</td>
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<td><strong>Requirements</strong></td>
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<td>- <strong>Track 1</strong>: 32 credits,</td>
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<td>including 16 modules,</td>
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<td>thesis and seminars.</td>
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<td><em>(In-Residence Only)</em></td>
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<td>- <strong>Track 2</strong>: 36.5 credits,</td>
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<td>including 23 modules and</td>
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<td>seminars.</td>
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<tr>
<td><em>(In-Residence or by Distance)</em></td>
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<td>- 15 credits: 10 modules</td>
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Truly Interdisciplinary Impact

- Seminars and lectures will be delivered by distinguished energy experts from academia, industry, and government.
- Distinguished faculty members are from the Bush School of Government and Public Service, College of Agriculture and Life Sciences, College of Architecture, College of Geosciences, College of Liberal Arts, Dwight Look College of Engineering, Mays Business School, and the School of Law.
Impactful Multi-Institution Research Projects
The Texas A&M Energy Institute and the Texas A&M Engineering Experiment Station (TEES) is leading the Southern Regional Manufacturing Center, one of four regional centers located across the country as part of the $140 million Clean Energy Smart Manufacturing Innovation Institute (CESMII).

The coalition brings nearly 200 partners from across academia, industry and non-profits—from more than 30 states—to spur advances in smart sensors and digital process controls that can radically improve the efficiency of advanced manufacturing in the U.S.
The Texas A&M Energy Institute, a joint partnership between Texas A&M University and the Texas A&M Engineering Experiment Station (TEES), is co-leading the modeling and simulation efforts of the $140 million Rapid Advancement in Process Intensification Deployment (RAPID) Manufacturing Institute of the American Institute of Chemical Engineers (AIChE).

More than 75 companies, 34 academic institutions, seven national laboratories, two other government laboratories and seven non-governmental organizations from all regions of the country will transform the U.S. industry by creating a manufacturing renaissance around innovative, modular, process-intensified manufacturing, while concurrently developing the next generation of a highly-skilled labor force.
The Texas A&M Energy Institute is joining eight universities to participate in a new six-year, $20 million project awarded by the U.S. Department of Energy’s (DOE) National Energy Technology Laboratory (NETL).

The project, “University Coalition for Fossil Energy Research – UCFER,” will work to identify, select, execute, review and disseminate knowledge from research that will improve the efficiency of production and use of fossil energy resources while minimizing the environmental impacts and reducing greenhouse gas emissions.
Academic Activities
Institute Events

Materials for Energy Workshop

Energy Institute Lecture Series

Distinguished Lecture in Energy

Texas A&M Conference on Energy
Student Organizations
The Texas A&M Energy Research Society (ERS) is a community established by the Texas A&M Energy Institute for graduate students and postdoctoral fellows conducting energy-related research under an Energy Institute faculty affiliate.

ERS aims to create a dynamic and synergistic environment that showcases energy-related research at Texas A&M, promotes collaborations, and enhances interactions with industrial communities.
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Transforming the World
The Need

- Our world has an urgent need for effective, transformative, and sustainable energy solutions.

- We must first recognize the importance of all types of natural resources (i.e., fossil-based, renewable, non-fossil based, water), their proper utilization, and their efficient integration.

- Addressing the world’s need requires the recognition of the important discoveries and advances in materials, catalysis, and separations, as well as fundamental advances in multi-scale energy systems engineering approaches for analysis, simulation, synthesis, and optimization.

- The Texas A&M Energy Institute is focused on important scientific and technological energy challenges that impact our society.
Welcome to the Texas A&M Energy Institute