

DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING

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Head: I. Karaman

Director, Graduate Program: M. Demkowicz

Materials Science and Engineering (MSEN) at Texas A&M University is jointly operated by the College of Engineering and College of Arts and Sciences. The Department works collaboratively with several universities nationally and internationally as well as with institutions including several NASA Research Centers, Army Research Laboratory, Air Force Research Laboratory, U.S. Naval Research Laboratory, and many of the Department of Energy National Laboratories, in addition to dozens of fortune 500 companies.

Graduate Study in the MSEN department provides the fundamental knowledge, practical skills, and professional experience necessary to enter a successful career involving advanced materials. Many of today's most pressing scientific problems stem from the limitations of materials currently available, and this department is at the forefront of new knowledge and discovery. Materials science and engineering involves the characterization of the physical and chemical properties of solid materials—metals and alloys, ceramics, magnetic materials, polymers, optical materials, semiconductors, superconductors, and composites—for the purpose of using, changing, or enhancing inherent properties to create or improve end products.

The Department provides educational and research opportunities in several areas of interest associated with Materials Science and Engineering such as Adaptive Functional Materials, Advanced Structural Materials, Computational Materials Science Design and Materials Informatics, Electrochemistry and Corrosion Science Engineering, Infrastructure Materials, Materials for Extreme Environments, Materials Synthesis and Processing, Polymers, Soft Matter and Composites, Small Scale Characterization Techniques, and Quantum Materials.

Modern facilities and equipment are available to enhance study and instruction in Materials Science and Engineering. These facilities include the following: Corrosion and Materials Reliability Laboratory, Microstructural Engineering of Structural and Active Materials (MESAM), Mass Spectroscopy Application and Collaboration Facility, Materials Characterization Facility (MCF), Interdisciplinary Soft Matter Facility (SoMF), Center for Infrastructure Renewal (CIR), Center for Research Excellence on Dynamically Deformed Solids (CREDDS), Materials Development and Characterization Center, Microscopy and Imaging Center (MIC), Nuclear Science Center, and Polymer Technology Consortium (PTC).

Degree Programs

The Department offers graduate studies leading to the degrees of: *Master of Engineering* (non-thesis), *Master of Science* (thesis and non-thesis), and *Doctor of Philosophy* in Materials Science and Engineering. This multidisciplinary department includes faculty members from several disciplines, including aerospace engineering, biomedical engineering, chemical engineering, chemistry, electrical engineering, mechanical engineering, nuclear engineering and physics.

Certificate Programs

Two certificate programs are offered to enable individuals the opportunity to gain specific knowledge and skill-sets: *Corrosion Science and Engineering*, and *Materials, Informatics and Design*. All departmental certificates are stand-alone programs, enrollment in a degree program is not required. Certificates may be awarded upon completion of requirements.

Contact

For more information on obtaining any of the degrees and/or certificates, please contact the graduate advising office at msen-advising@tamu.edu.

Faculty

Akbulut, Mustafa, Associate Professor
Materials Science & Engr
PHD, University of California at Santa Barbara, 2007

Alge, Daniel L, Associate Professor
Materials Science & Engr
PHD, Purdue University, 2010

Arroyave, Raymundo, Professor
Materials Science & Engr
PHD, Massachusetts Inst of Technology, 2004

Asadi, Amir, Assistant Professor
Materials Science & Engr
PHD, University of Manitoba, 2013

Balbuena, Perla B, Professor
Materials Science & Engr
PHD, The University of Texas at Austin, 1996

Banerjee, Sarbajit, Professor
Materials Science & Engr
PHD, State University of New York at Stony Brook, 2004

Batteas, James D, Professor
Materials Science & Engr
PHD, University of California at Berkeley, 1995

Bazzi, Hassan, Professor
Materials Science & Engr
PHD, McGill University, 2003

Benzerga, Amine A, Professor
Materials Science & Engr
PHD, Ecole Nationale Supérieure Des Mines De Paris, 2000

Bullard, Jeffrey, Professor
Materials Science & Engr
PHD, University of California at Berkeley, 1993

Butler, Brady, Visiting Assistant Professor
Materials Science & Engr
PHD, Johns Hopkins University, 2017

Cagin, Tahir, Professor
Materials Science & Engr
PHD, Clemson University, 1988

Case, Raymundo P, Professor of the Practice
Materials Science & Engr
PHD, University of Manchester Institute of Science and Technology, 2002

Castaneda-Lopez, Homero, Professor
Materials Science & Engr
PHD, Penn State University, 2001

Creasy, Terry S, Associate Professor
Materials Science & Engr
PHD, University of Delaware, 1997

Demkowicz, Michal J, Associate Professor
Materials Science & Engr
PHD, Massachusetts Institute of Technology, 2005

Elabd, Yossef A, Professor
Materials Science & Engr
PHD, Johns Hopkins University, 2001

Elwany, Alaa Mohamed, Assistant Professor
Materials Science & Engr
PHD, Georgia Institute of Technology, 2009

Erdemir, Ali, Professor
Materials Science & Engr
PHD, Georgia Institute of Technology, 1986

Fang, Lei, Associate Professor
Materials Science & Engr
PHD, Northwestern University, 2010

Gaharwar, Akhilesh K, Associate Professor
Materials Science & Engr
PHD, Purdue University, 2011

Grasley, Zachary C, Professor
Materials Science & Engr
PHD, University of Illinois Urbana Champaign, 2006

Green, Micah, Professor
Materials Science & Engr
PHD, Massachusetts Institute of Technology, 2007

Grunlan, Jaime C, Professor
Materials Science & Engr
PHD, University of Minnesota, 2001

Grunlan, Melissa A, Professor
Materials Science & Engr
PHD, University of Southern California, 2004

Guo, Bing, Associate Professor
Materials Science & Engr
PHD, Tsinghua University, China, 1998

Harris, Harlan R, Associate Professor
Materials Science & Engr
PHD, Texas Tech University, 2003

Hartl, Darren, Associate Professor
Materials Science & Engr
PHD, Texas A&M University, 2009

Hemmer, Philip R, Professor
Materials Science & Engr
PHD, Massachusetts Inst of Technology, 1984

Hipwell, M Cynthia, Professor
Materials Science & Engr
PHD, University of California at Berkeley, 1996

Hwang, Wonmuk, Associate Professor
Materials Science & Engr
PHD, Boston University, 2001

Jeong, Hae-Kwon, Professor
Materials Science & Engr
PHD, University of Minnesota, 2004

Kameoka, Jun, Professor
Materials Science & Engr
PHD, Cornell University, 2002

Karaman, Ibrahim, Professor
Materials Science & Engr
PHD, University of Illinois at Urbana-Champaign, 2000

Katehi-Tseregounis, Linda, Professor
Materials Science & Engr
PHD, University of California, 1984

Kolluru, Pavan, Assistant Professor
Materials Science & Engr
PHD, University of Illinois at Urbana-Champaign, 2014

Kuo, Yue, Professor
Materials Science & Engr
PHD, Columbia University, 1980

Kuttolamadom, Mathew A, Associate Professor
Materials Science & Engr
PHD, Clemson University, 2012

Lagoudas, Dimitris C, University Distinguished Professor
Materials Science & Engr
PHD, Lehigh University, 1986

Le Graverend, Jean-Briac B, Associate Professor
Materials Science & Engr
PHD, Ecole Nationale de Mécanique et d'Aérotechnique, France, 2013

Liang, Hong, Professor
Materials Science & Engr
PHD, Stevens Institute of Technology, 1992

Lin, Paotai, Associate Professor
Materials Science & Engr
PHD, Northwestern University, 2009

Lutkenhaus, Jodie, Professor
Materials Science & Engr
PHD, Massachusetts Institute of Technology, 2007

Ma, Chao, Assistant Professor
Materials Science & Engr
PHD, University of California, 2015

Mansoor, Bilal, Associate Professor
Materials Science & Engr
PHD, University of Michigan, 2010

McDeavitt, Sean M, Professor
Materials Science & Engr
PHD, Purdue University, 1992

McShane II, Michael J, Professor
Materials Science & Engr
PHD, Texas A&M University, 1999

Michaudel, Quentin, Assistant Professor
Materials Science & Engr
PHD, The Scripps Research Institute, 2015

Naraghi, Mohammad, Associate Professor
Materials Science & Engr
PHD, University of Illinois at Urbana Champaign, 2009

Naugle, Donald G, Professor
Materials Science & Engr
PHD, Texas A&M University, 1965

Needleman, Alan, University Distinguished Professor
Materials Science & Engr
PHD, Harvard University, 1971

Nyakit, Luke O, Instructional Assistant Professor
Materials Science & Engr
PHD, Texas Tech University, 2008

Ozmetin, Ali E, Senior Lecturer
Materials Science & Engr
PHD, Texas A&M University, 2009

Paramore, James, Visiting Assistant Professor
Materials Science & Engr
PHD, University of Utah, 2015

Pentzer, Emily, Associate Professor
Materials Science & Engr
PHD, Northwestern University, 2010

Pharr IV, George M, Professor
Materials Science & Engr
PHD, Stanford University, 1979

Pharr, George, Assistant Professor
Materials Science & Engr
PHD, Harvard University, 2014

Qian, Xiaofeng, Associate Professor
Materials Science & Engr
PHD, Massachusetts Institute of Technology, 2008

Radovic, Miladin, Professor
Materials Science & Engr
PHD, Drexel University, 2001

Raiman, Stephen, Assistant Professor
Materials Science & Engr
PHD, University of Michigan, 2016

Reddy, Junuthula, Distinguished Professor and Regents Professor
Materials Science & Engr
PHD, University of Alabama at Huntsville, 1974

Ross Jr, Joseph H, Professor
Materials Science & Engr
PHD, University of Illinois at Urbana-Champaign, 1986

Sagapuram, Dinakar, Assistant Professor
Materials Science & Engr
PHD, Purdue University, 2013

Seminario, Jorge M, Professor
Materials Science & Engr
PHD, Southern Illinois University Carbondale, 1987

Shamberger, Patrick J, Associate Professor
Materials Science & Engr
PHD, University of Washington, 2010

Shao, Lin, Professor
Materials Science & Engr
PHD, University of Houston, 2001

Sheldon, Matthew T, Assistant Professor
Materials Science & Engr
PHD, University of California at Berkeley, 2010

Srivastava, Ankit, Associate Professor
Materials Science & Engr
PHD, University of North Texas, 2013

Su, Hung-Jue, Professor
Materials Science & Engr
PHD, University of Michigan at Ann Arbor, 1988

Sukhishvili, Svetlana A, Professor
Materials Science & Engr
PHD, Lomonosov Moscow State University, 1989

Talreja, Ramesh R, Professor
Materials Science & Engr
PHD, The Technical University of Denmark, 1974

Tamamis, Phanourios, Assistant Professor
Materials Science & Engr
PHD, University of Cyprus, 2010

Teizer, Winfried, Professor
Materials Science & Engr
PHD, University of Massachusetts - Amherst, 1998

Thomas, Edwin L, Visiting Professor
Materials Science & Engr
PHD, Cornell University, 1974

Tu, Qing, Assistant Professor
Materials Science & Engr
PHD, Duke University, 2017

Vaddiraju, Sreeram, Associate Professor
Materials Science & Engr
PHD, University of Louisville, 2006

Wang, Jyhwen, Professor
Materials Science & Engr
PHD, Northwestern University, 1991

Wang, Shiren, Associate Professor
Materials Science & Engr
PHD, Florida State University, 2006

Ware, Taylor, Associate Professor
Materials Science & Engr
PHD, University of Texas at Dallas, 2013

Whitcomb, John D, Professor
Materials Science & Engr
PHD, Virginia Tech, 1988

Wilkerson, Justin, Assistant Professor
Materials Science & Engr
PHD, Johns Hopkins University, 2014

Williams, Richard, Professor
Materials Science & Engr
PHD, University of California at Berkeley, 1978

Wong, Zi Jing, Assistant Professor
Materials Science & Engr
PHD, University of California at Berkeley, 2015

Wooley, Karen L, University Distinguished Professor
Materials Science & Engr
PHD, Cornell University, 1993

Wu, Wenhao, Associate Professor
Materials Science & Engr
PHD, University of Chicago, 1992

Xie, Yu Xuan, Assistant Professor
Materials Science & Engr
PHD, University of Sydney, 2013

Yu, Choongho, Professor
Materials Science & Engr
PHD, The University of Texas at Austin, 2004

Zhou, Hongcai J, Professor
Materials Science & Engr
PHD, Texas A&M University, 2000

Certificates

- Corrosion Science and Engineering Certificate (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/materials-science/corrosion-science-engineering-certificate/>)
- Materials, Informatics and Design Certificate (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/materials-science/materials-informatics-design-certificate/>)

Masters

- Master of Engineering in Materials Science and Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/materials-science/meng/>)
- Master of Science in Materials Science and Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/materials-science/ms/>)

Doctoral

- Doctor of Philosophy in Materials Science and Engineering (<http://catalog.tamu.edu/graduate/colleges-schools-interdisciplinary/engineering/materials-science/phd/>)