

Discover materials for use in space, energy, medicine, computing, communications and sensing.

**RESEARCH FOCUS AREAS**

- Advanced Manufacturing
- Biomedical Materials & Devices
- Material Informatics, Modeling & Simulation
- Materials for Extreme Environments
- Metamaterials
- Optical Materials
- Quantum/Semiconductor Materials & Devices

**PROGRAM HIGHLIGHTS**

- One-on-one training
- Signature technical courses
- Specialization in areas of interest
- Extensive center and lab capabilities
- Entrepreneurial mindset, supported by Tech Launch Arizona
- Online MS classes

**DEGREES**

- PhD Materials Science & Engineering
- MS Materials Science & Engineering (*online options*)
- ME Innovation, Sustainability & Entrepreneurship (*online options*)

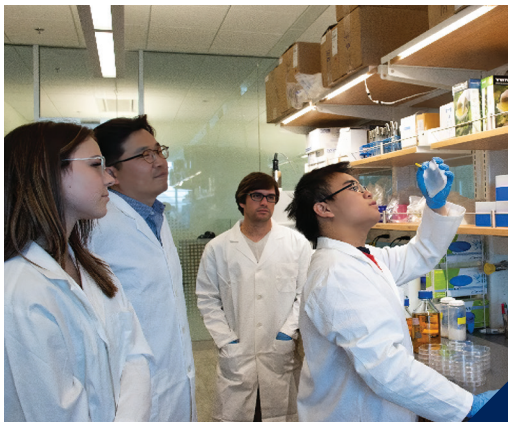
**CERTIFICATES**

- Materials Science & Engineering Fundamentals
- Microelectronics Packaging
- Semiconductor Processing



“ The diverse research problems in the MSE department have allowed me to investigate many classes of materials and learn many characterization techniques. The unique nature of the opportunities I have been presented challenge me to become a better engineer everyday. ”

- Luis Arciniaga, graduate student



FUNDING OPTIONS  
THROUGHOUT DEGREE  
LIFECYCLE

**APPLICATION DEADLINES**

- Fall: January 15
- Spring: June 1

**CONTACTS**

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Graduate Studies Chair  
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COLLEGE OF ENGINEERING

Materials Science  
& Engineering



“ Throughout history, materials have been instrumental for technological advancement of society. The contributions from materials scientists and engineers are profound, as we are responsible for the discovery and development of design enabling materials that pave the way for innovation in the 21st century.” ”

- Sammy Tin, Department Head

## Faculty Expertise

**Oana Cazacu** – oanacazacu@arizona.edu

modeling and simulation of anisotropy in mechanical behavior, plasticity-damage couplings in HCP materials, impact and fragmentation, hypersonic structures, digital manufacturing

**Erica Corral** – elcorral@arizona.edu

thermal protection system of materials, ceramic manufacturing, screening methods for application in hypersonic flight vehicle systems

**Pierre Deymier** – deymier@arizona.edu

topologic phononics, acoustic metamaterials for information processing communication and sensing

**Brian Kim** – briankim@arizona.edu

2D quantum materials and heterostructures for emerging optical and quantum technologies

**Minkyu Kim** – minkyukim@arizona.edu

(bio)polymeric materials for defense, health, and environmental technology

**Marat Latypov** – latmarat@arizona.edu

computational materials science, mechanics, physics-informed machine learning

**Douglas Loy** – daloy@arizona.edu

polymer engineering, additive manufacturing

**Pierre Lucas** – pierre@arizona.edu

chalcogenide glasses and phase change materials for infrared optics and phononics

**Venkateswara Rao Manga** – manga@arizona.edu

computational materials science and engineering • thermodynamics modeling • materials process simulation

**Krishna Muralidharan** – krishna@arizona.edu

integrated computational materials engineering, additive manufacturing, planetary materials, carbon nanoscience

**Zafer Mutlu** - zmutlu@arizona.edu

graphene nanoribbons, nanoelectronics, semiconductor manufacturing, semiconductor materials and devices, nanofabrication, microfabrication, field-effect transistors, low-dimensional materials, quantum materials and devices, nanotechnology, cleanroom environments

**David Poirier** – poirierd@arizona.edu

physical metallurgy and solidification of alloys

**Barrett Potter** – bgpotter@arizona.edu

optical and electronic materials and composites for energy generation, storage and sensing, environmental degradation, performance prediction of materials and devices

**Benoit Revil-Baudard** – revil@arizona.edu

modeling of materials and manufacturing processes, computational mechanics and finite element simulation, modeling and simulation of energetic materials, dynamic and impact behavior of materials, mechanical characterization of materials

**Sammy Tin** – tin@arizona.edu

physical metallurgy and mechanical properties of high-performance structural materials

**Donald Uhlmann** – uhlmann@aml.arizona.edu

antimicrobial technology, biomaterials and ceramics

**Andrew Wessman** – wessman@arizona.edu

additive manufacturing, alloy development, physical metallurgy

**Xiaodong Yan** – xyan@arizona.edu

semiconductor materials and devices, nanofabrication, neuromorphic computing, quantum technology