



Life After Graduation

There is a strong demand for Auburn PFE graduates in a wide variety of industries. Polymer and fiber engineering prepares students for work in research and development, product development, process engineering, composite and polymer engineering, quality assurance engineering, technical services and technical sales for the public and private sectors.

Polymer and fiber engineering students have the opportunity to prepare for a variety of graduate degree programs, including biomedical engineering, materials engineering or science, polymer science, biochemistry, environmental science, industrial engineering, medicine and health-related fields, law, computer information systems or business.

Scholarships

The College of Engineering and the Department of Polymer and Fiber Engineering provide numerous scholarship opportunities to students at every stage of their academic career. While no application is required for most university and college-wide scholarships, the deadline for departmental scholarship applications is Jan. 15.

For information about these offerings, visit us on the Web at www.eng.auburn.edu/scholarships

The Auburn Advantage

Auburn University has provided instruction, research and outreach to benefit the state and nation for more than 150 years and is among a distinctive group of universities designated as Land, Sea and Space Grant institutions. Auburn makes a nearly \$5 billion economic contribution to the state each year, has more than 250,000 graduates and provides 130 degree programs to more than 24,000 graduate and undergraduate students.

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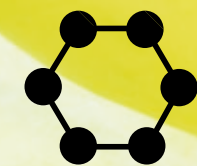
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Polymer and Fiber
ENGINEERING



AUBURN
UNIVERSITY



Welcome to the Department of Polymer and Fiber Engineering

In Auburn's Department of Polymer and Fiber Engineering, we recognize the significant societal contributions to be made with advances in engineered materials. Among the century's greatest engineering achievements and advances in technology are developments made towards understanding and improving the structure, properties and performance of materials, as well as their environmental relationships.

Polymers can be...

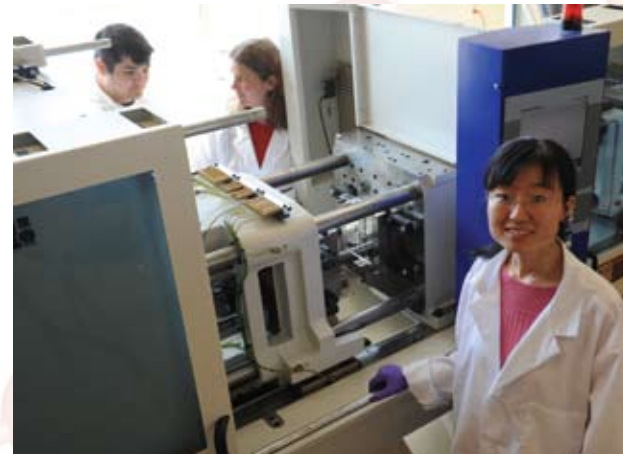
- ▶ In your cell phone, iPod, computer and car
- ▶ Components of watercraft, aircraft and high-performance sports equipment, such as skis, snowboards, tennis racquets, golf clubs and bicycles
- ▶ Body-friendly materials used to make arterial stents, heart valves and artificial joints

Innovative polymeric materials and new uses for old materials are constantly being developed around the globe and here at Auburn University. As they explore the numerous capabilities of polymers, our students and faculty members are improving materials that allow automobile, aircraft, aerospace and marine engineers to design and build stronger components, as well as the option to combine several complex parts into a single integrated piece.

Undergraduate Curriculum

Bachelor of Polymer and Fiber Engineering

Auburn's polymer and fiber engineering curriculum stresses the fundamentals of engineering, behavior of polymeric materials, polymer processing and fiber-reinforced polymer composite materials.



Bachelor of Polymer and Fiber Engineering ▶ Fiber Option

The fiber option focuses on the engineering of fibrous structures and the mechanics of flexible structures. The curriculum includes coursework in fiber-reinforced materials, protective materials and the fundamentals of polymers.

Bachelor of Polymer and Fiber Engineering ▶ Polymer Option

Polymers include both man-made materials, such as polypropylene, and biological materials such as DNA and cellulose. With a strong basis in chemistry, the polymer option includes the processing and characterization of polymers, as well as polymers from renewable resources.

Research and Laboratories

Polymer and fiber engineering laboratories used by students and faculty are equipped with the latest in technology. Research is conducted in the following areas:

- ▶ Improved shape memory plastics and tough coating systems for automotive and architectural applications
- ▶ Green and sustainable materials using cellulose from harvested trees
- ▶ Polymers that conduct electricity
- ▶ Antimicrobial fibers
- ▶ Nanomaterials for industrial and biomedical applications
- ▶ Polymer and ceramic composites
- ▶ Injection molding, fiber extrusion, nonwovens and additional engineered fibrous structures
- ▶ Protective covers for aircraft, vehicles and structures used at work, at home and by the military

Research into new types of functional polymers is enabling revolutionary advances in electronic and photonic sensors and devices, fuel cells and batteries. Faculty members working in Auburn's hydrogen fuel cell research

program are developing films for a fuel cell powered car, while other faculty members are utilizing new processing techniques such as electrospinning. Work is being conducted to develop the next generation of fibers and films reinforced with additives to perform under high-performance applications, such as heat resistance, conductivity and strength.

Developments are being made with polymeric and fibrous materials used in drug delivery and biological applications. Biomass research is helping to develop strong natural materials and composites from waste created by the seafood and forestry industries, which could be used in pharmaceuticals and various strong and stable coatings.

Extracurricular Opportunities

Auburn Engineering students can participate in a wide variety of educational activities outside of the classroom, gaining experience with teamwork and project management and enjoying time with their classmates and peers. PFE students are encouraged to participate in campus organizations, such as:

- ▶ Auburn University's hovercraft team, a part of War Eagle Motorsports, which designs, builds and races an amphibious vehicle by learning skills in composites, analysis, modeling and control systems
- ▶ Tau Beta Pi engineering honor society
- ▶ Phi Psi professional fraternity
- ▶ Society of Women Engineers (SWE)
- ▶ National Society of Black Engineers (NSBE)

For more information, visit www.eng.auburn.edu/organizations

Undergraduate funded research projects, such as those involved in the study of shape memory polymers and controlled drug release from fibers, are often available to interested students.

