

# Polymer Science & Engineering

## 2012 Department at a Glance

### Points of Pride

- One of the largest academic polymer research centers in the world.
- 200+ scientists and students are involved in cross-disciplinary research.
- Faculty members and students receive numerous national and international awards.
- The department and its affiliated centers are recipients of +\$15M in research support per year from 45+ industrial collaborations and government agencies, including the DOE, NIH, NSF, EPA, and DOD.
- 15-20 PhDs are granted each year (over 540 since PSE's inception).
- Departmental facilities are equipped with \$26M in instrumentation.
- Faculty receive +\$2M in industry support per year.

### Education

- PhD degree program covers all aspects of the evolving polymer field, from synthesis to engineering and physics, with a broad spectrum of courses in materials science.
- Cross-disciplinary research is integral to the program; interdepartmental collaborations include Biology, Chemical Engineering, Chemistry, Food Science, Mechanical & Industrial Engineering, Microbiology, Physics, and Veterinary & Animal Sciences.
- Students and faculty participate extensively in collaborative research programs with other universities and national laboratories.
- PSE offers special topics courses for undergraduate and graduate science and engineering students, and short courses for professional societies and industry.
- Student awards over the past 3 years include: Bausch & Lomb Student Innovation Award, NIST/GRC Fellowship; Kodak Fellowship; National Defense Science & Engineering Graduate Fellowship; Claire Boothe Luce Fellowship; Gates Millennium Scholars Award; Eugene M. Isenberg Fellowship; Congressional Fellowship; Quadrant Award; Adhesion Society Award; and IGERT Fellowship.

### Leadership & Outreach

- Serve as officers in various professional societies, including the American Physical Society, American Chemical Society, and the Materials Research Society.
- Many faculty members are fellows and recipients of major research awards from the same societies listed above.
- The faculty includes several members of the National Academies.
- Serve as editors, associate editors, and sit on advisory boards for some of the most important journals in polymers, materials science, chemistry, physics, and engineering.
- Testify in congressional hearings on the environment and energy issues.
- Serve as panel members or chairs of advisory panels for federal agencies.
- Publications include some of the most highly cited articles in various professional journals.
- Faculty efforts have led to successful large center grant awards in polymers (MRSEC), nanoscience (CHM), and renewable energy (EFRC).



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### By the Numbers FY11

Tenure-Track Faculty	18
Postdoctoral Fellows	47
Graduate Students	113
Research Awards	\$15,278,800

### Research Areas

- Synthetic Polymer Chemistry
- Soft Materials Physics
- Nanostructured Materials
- Bio-Inspired Materials
- Energy and Green Science
- High Performance Composites
- Electronic Polymers/Devices

### Research Facilities

- Mass Spectrometry and Molecular Weight Determination
- Nuclear Magnetic Resonance
- X-ray Scattering
- Photovoltaics
- Surface Analysis
- Electron Microscopy
- Thermal Analysis
- Optical Microscopy
- Light Scattering
- Vibrational Spectroscopy
- Rheology/Mechanical Properties
- Cleanrooms for Nanofabrication