Here's a sampling of their employers:

- Poly Science graduates go on to
- designed to fill the need for scientists who can think and talk
- numerous departments to produce a learning experience
- Ph.D. program. This exciting new Ph.D. program brings together
- participate in the newly created Integrated Biosciences
- Students interested in biology-related research may wish to
- and doctorate degrees in polymer science.

GRADUATE STUDY IN POLYMER SCIENCE

Kraton
Ingredron
IBM
Honeywell
Hercules Research
Hankook Tire Co., LTD.
The Goodyear Tire &
GAF Corporation
Ford Motor Company
Firestone Polymers, LLC
Exxon Mobil
DuPont
Chemical Abstracts
Carnegie Mellon University
Bridgestone Americas, Inc.
BFGoodrich
Ben Venue Laboratories, Inc
BASF
Avery Dennison
AT&T Bell Labs
ATK Space Systems
AMOCO
Akron Rubber
Akron Polymer Systems
Advanced Elastomer Development Lab

Zeon Chemicals
Xerox
Westinghouse
Virginia Tech
Valspar Corporation
U.S. Naval Air Warfare Center
University of Tennessee,
University of
University of Colorado
University of California
Tremco
Tektronix
Sherwin-Williams
Shell Oil
Shell Chemical Company
Samyung Corporation
Samsung Electronics
SABIC
Proctor & Gamble
PolyOne
Ohio Aerospace Institute
NIST
NASA
MRI Medical
Morton Chemical
Lubrizol Corporation
Lexmark
LG Chemical
Kumho Tire
Knoxville
Southern Mississippi

animal facilities and clinical research infrastructure.

Its regional location and easy access to air and
venues that appeal to almost every interest.

is Ohio's fifth-largest city. It offers a vibrant
time, part-time and online students, veterans, and adults returning to the classroom.

An impressive array of research facilities is
available. Most of those used by polymer
faculty and staff are located in the

More than 50 laboratories are equipped with
146,000-square-foot Goodyear Polymer Center.

research is pursued using a range of powerful software and
related bioengineering techniques. Molecular modeling
laser capture microdissection, immunohistochemistry and
spectrometry, thermal analysis; rheo-optics; X-ray diffraction;
FTIR and UV-visible spectroscopy; GPC; MALDI-TOF mass
State-of-the-art instrumentation is available for NMR,
study of polymer structure and properties, and
modern tools for the synthesis of polymers, the

JOB PLACEMENT AFTER GRADUATION

ready to begin their career.

graduate, or have one lined up once they're out of school and
because most graduates either have secured a job before they
placement within one year of graduation. This is made possible
placement rate after receiving their degree – 100 percent
Welcome to the Department of Polymer Science

Celebrating over 50 Years of Polymers

The University of Akron is the center of Akron, Ohio, the Polymer Capital of the World. Since 1956, students and faculty from around the globe have come to UA to focus on polymer innovations and applications of research in science, technology, and medicine. In fact, The University of Akron is the only graduate college in the US that offers both Polymer Science and Polymer Engineering programs. The 25th anniversary of the College was celebrated in 2013.

Applications Information and Procedures

FINANCIAL AID

The department supports all incoming qualified full-time Ph.D. graduate students. For 2016-17 the standard stipend amount for departmental assistantships is $25,000, with some enhanced stipends and industrial fellowships as high as $30,000 for 12 months. Students who receive financial aid also are awarded a tuition scholarship for graduate instructional fees, non resident surcharge and partial payment of a parking permit. Through grants and contracts awarded to Polymer Science faculty, more than 150 additional students are supported as research assistants.

APPLICATION INFORMATION AND PROCEDURES

Students with an undergraduate degree in chemistry, physics or engineering and a GPA of 3.0/4.0 or better may apply online at uakron.edu/cpspe/academics/apply-now.dot. Students with a degree in biology or natural sciences usually need additional undergraduate courses in physical and analytical chemistry. For such students a special non-degree admission may be given for one or two semesters, followed by a full admission upon successful completion of the remedial undergraduate courses. A student with a master’s degree from another university may be admitted to the Ph.D. program.

GRADUATE ADMISSIONS REQUIREMENTS FOR THE DEPARTMENT OF POLYMER SCIENCE

Persons seeking admission into the Ph.D. program in the Department of Polymer Science are required to submit all of the listed materials to the UA graduate school. Incomplete applications will not be considered under any circumstances.

1. Fully completed on-line Graduate Application
2. Application Fee
3. ALL official undergraduate transcripts and, if applicable, graduate transcripts
4. Three (3) letters of professional recommendation
5. Statement of purpose (personal statement)
6. Submission of Graduate Record Examination (GRE) general test scores (subject exam recommended)
7. All international students must submit official Test of English as a Foreign Language (TOEFL) scores (minimum 550 paper-based; 213 computer-based; or 79 internet-based)

The early consideration application deadline for fall, 2017, is Dec. 15, 2016, for Ph.D. applicants. The final application deadline for both foreign and domestic applicants is Feb. 1, 2017.

Department of Polymer Science Students

Students in the department, who represent the United States and numerous foreign countries, pursue Polymer Science degrees within an interdisciplinary curriculum. Students come into the program with backgrounds in chemistry, chemical engineering, physics, materials science and engineering, polymer science, polymer engineering, biology and computer science, often with the support of scholarships and awards, graduate assistantships, and sometimes government fellowships from the National Science Foundation and the National Institutes of Health.

The Polymer Science Student Organization (PSSO) sponsors academic and extracurricular activities, including trips to scientific meetings and research and production facilities of area industries, student seminars, and picnics. PSSO has sponsored guest speakers on career development and resume/interview preparation, and the group also directs the Eastman Chemical Company Lecture Series, which brings two researchers to campus each year. PSSO officers (elected annually) serve on a planning committee to provide input on issues within the department, college and University.
Department of Polymer Science Faculty

Eric J. Amis – Dean, College of Polymer Science and Polymer Engineering, Professor of Polymer Science
Ph.D., University of Wisconsin-Madison, 1981
Phone: 330-972-7500 e-mail: amis@uakron.edu
Combinatorial and high-throughput methods for functional polymers and biomaterials, direct write and additive manufacturing, nanomaterial characterization, polyelectrolytes, gels and networks, and soft matter physics.

Matthew L. Becker – Professor of Polymer Science and Biomedical Engineering
Ph.D., Washington University, 2003
Phone: 330-972-2834 e-mail: becker@uakron.edu
Polymer chemistry and synthesizing macromolecular materials for molecular sensing and regenerative medicine applications.

Stephen Z.D. Cheng – Frank C. Sullivan Distinguished Research Professor; Robert C. Musson Professor; Trustees Professor, College of Polymer Science and Polymer Engineering; Senior Editor, Polymer
Ph.D. Rensselaer Polytechnic Institute, 1985
Phone: 330-972-6931 e-mail: cheng@uakron.edu
Condensed states in polymers, liquid crystals, surfactants and micelles, and focuses on the interactions, responses, dynamics, and structures of materials on varying length and time scales in which the material itself embodies the technology. His research activities include investigations of transition thermodynamics and kinetics in metastable states, ordered structures and morphologies, surface and interface structures in electronic and optical materials and advanced functional hybrid materials.

Steven S.C. Chuang – Professor of Polymer Science
Ph.D. University of Pittsburgh, 1985
Phone: 330-972-6993 e-mail: schuang@uakron.edu
In situ vibrational spectroscopic studies of the reactivity of functional groups in polymers and adsorbed species on catalyst surfaces. Fabrication of the devices for separation processes and energy generation/storage.

Ali N. Dhinojwala – H.A. Morton Professor of Polymer Science
Ph.D., Northwestern University, 1994
Phone: 330-972-6246 e-mail: ali4@uakron.edu
Adhesion, friction and wetting; development of light-based spectroscopic techniques to understand physical properties of molecules at surfaces and interfaces; bio adhesion and bio mimicry in the development of synthetic adhesives inspired by geckos and spiders.

Andrey V. Dobrynin – Alan N. Gent Ohio Research Scholar Professor of Polymer Science
Ph.D. Moscow Institute of Physics and Technology, Russia, 1991
Phone: 330-972-6288 e-mail: adobrynin@uakron.edu
Theory and simulations of polymers and soft matter. Research areas include: polyelectrolyte solutions and gels, charged polymers at surfaces and interfaces; electrostatic interactions in biological systems, adhesion and wetting at nanoscale; friction and lubrication in polymeric and biological systems; graphene emulsions, foams and films.

Mark D. Foster – Associate Dean for Programs, Policy, and Engagement; Director of the Akron Global Polymer Academy; Thomas A. Knowles Professor of Polymer Science
Ph.D., University of Minnesota, 1987
Phone: 330-972-5323 e-mail: mdfoster@uakron.edu
Microstructure and dynamics of polymer systems, especially in thin films and near interfaces, e.g. surface segregation and adhesion, novel X-ray and neutron scattering techniques, especially small angle scattering and reflectometry, for studying these phenomena.

Li Jia – Associate Professor of Polymer Science
Ph.D., Northwestern University, 1996
Phone: 330-972-7511 e-mail: lijia@uakron.edu
Supramolecular elastomers, supramolecular reinforcement of elastomers, metal-catalyzed polymerizations, and metal-catalyzed organic reactions.

Abraham Joy – Associate Professor of Polymer Science
Ph.D., Tulane University, 2000
Phone: 330-972-6004 e-mail: abraham@uakron.edu
Development of peptidomimetic biomaterials, photosensitive / thermostressponsive polymers and self-assembling systems. Applications areas: antimicrobials; polymers for 3D printing; wet adhesives; controlled delivery of biologics; wound healing.

Joseph P. Kennedy – Distinguished Professor of Polymer Science
Ph.D., University of Vienna (Austria), 1954, MBA Rutgers University, 1961
Phone: 330-972-7512 e-mail: josep19@uakron.edu
Synthesis of well-defined macromolecules for potential industrial and biomaterial applications.

Hunter King – Assistant Professor
Ph.D., University of Massachusetts, Amherst, 2013
Phone: 330-972-6831 e-mail: hking@uakron.edu
Mechanics of structures engineered by plants and animals; non-equilibrium and soft matter physics; open-source instrumentation for tabletop experiment and field measurement.

William J. Landis – Professor of Polymer Science; G. Stafford Whitby Chair in Polymer Science
Ph.D., Massachusetts Institute of Technology, 1972
Phone: 330-972-8483 e-mail: wlandis@uakron.edu

Tianbo Liu – A. Schulman Professor of Polymer Science
Ph.D., State University of New York at Stonybrook, 1999
Phone: 330-972-3496 e-mail: tlui@uakron.edu
Solution physical chemistry of macroions, block copolymers, inorganic-organic hybrids, colloids, polyelectrolytes and biomacromolecules; self-assembly behavior; laser light and X-ray scattering techniques.
The University of Akron is the only graduate science, technology, and medicine. In fact, innovations and applications of research in Eastman Chemical Company Lecture Series, which brings resume/interview preparation, and the group also directs the scientific meetings and research and production facilities.

The Polymer Science Student Organization (PSSO) sponsors graduate assistantships, and sometimes government engineering, physics, materials science and engineering, into the program with backgrounds in chemistry, chemical.

Students in the department, who represent the United States Department of Polymer Ohio, the Polymer Capital of the World.

Welcome to the Science and Polymer Engineering programs.

The 25th anniversary of the College was

applicants is Feb. 1, 2017.

The early consideration application deadline for

5.

FOR POLYMER SCIENCE

admission upon successful completion of the remedial chemistry. For such students a special non-degree admission additional undergraduate courses in physical and analytical processes and energy generation/storage.

and films.

in the development of synthetic adhesives inspired by geckos and interface structures in electronic and optical materials and condensed states in polymers, liquid crystals, surfactants and polymers and biomaterials, direct write and additive assemblies systems. Applications areas: antimicrobials; polymers biomacromolecules; self-assembly behavior; laser light and X-ray scattering techniques.

biochemistry. Tissue engineering of calcified tissues. Effects of as a Foreign Language (TOEFL) scores (minimum 550 general test scores (subject exam recommended)

uakron.edu/cpspe/academics/apply-now.dot

as Foreign Language (TOEFL) scores (minimum 550 general test scores (subject exam recommended)

Shi-Qing Wang – Kumho Professor of Polymer Science

Ph.D., University of Chicago, 1987
Phone: 330-971-7108 e-mail: wang@uakron.edu

Polymer physics and engineering: general phenomenology of linear and nonlinear viscoelastic processes; deformation, yielding and failure of polymeric materials; experimental and theoretical foundations of polymer rheology and molecular mechanics of polymer glasses; polymer processing behavior and ultimate mechanical properties of amorphous polymer solids.

Chrys Wesdemiotis – Distinguished Professor of Polymer Science

Ph.D., Technical University of Berlin, 1979
Phone: 330-972-7699 e-mail: wesdemiotis@uakron.edu

Development and applications of multi-dimensional mass spectrometry and separation–mass spectrometry methods for the characterization of new synthetic polymers and polymer-biomolecule interactions and interfaces.

Yu Zhu – Assistant Professor of Polymer Science

Ph.D., University of Cologne, 2007
Phone: 330-972-5945 e-mail: yzhu@uakron.edu

Synthesis and assembly of carbon nanomaterials, the use of those novel materials in energy harvesting/storage devices and nano-electronics. Conjugated polymer synthesis and organic electronics.
GRADUATE STUDY IN POLYMER SCIENCE

The Department of Polymer Science offers both master’s and doctorate degrees in polymer science.

Students interested in biology-related research may wish to participate in the newly created Integrated Biosciences Ph.D. program. This exciting new Ph.D. program brings together numerous departments to produce a learning experience designed to fill the need for scientists who can think and talk across several fields of scientific inquiry. Please visit uakron.edu/id/ib.

After Graduation

Polymer Science graduates go on to productive and successful careers in private industry, government and education. Here’s a sampling of their employers:

- 3M
- Advanced Elastomer Systems
- Akron Polymer Systems
- Akron Rubber Development Lab
- ALCOA
- AMOCO
- ATK Space Systems
- AT&T Bell Labs
- Avery Dennison
- BASF
- Ben Venue Laboratories, Inc
- BF Goodrich
- BP Research
- Bridgestone Americas, Inc.
- Case Western Reserve University
- Carnegie Mellon University
- Celanese
- Chemical Abstracts
- Chemtura
- Dow Chemical
- DuPont
- Eastman Chemical Company
- Exxon Mobil
- Firestone Polymers, LLC
- Ford Motor Company
- GAF Corporation
- The Goodyear Tire & Rubber Company
- Hankook Tire Co., LTD.
- Hercules Research
- Honeywell
- Hyundai Petrochemical
- IBM
- Ingredion
- Johnson & Johnson
- Kraton
- Kumho Tire
- LG Chemical
- Lexmark
- Lubrizol Corporation
- The Lord Corporation
- Morton Chemical
- MRI Medical
- NASA
- NIST
- Ohio Aerospace Institute
- Penn State University
- PolyOne
- Proctor & Gamble
- Rensselaer Polytechnic Institute
- SABIC
- Samsung Electronics
- Samyang Corporation
- Shell Chemical Company
- Shell Oil
- Sherwin-Williams
- Tektronix
- The Timken Company
- Tremco
- University of California
- University of Colorado
- University of Southern Mississippi
- University of Tennessee, Knoxville
- U.S. Army
- U.S. Naval Air Warfare Center
- Valspar Corporation
- Virginia Tech
- Westinghouse
- W.L. Gore and Associates
- Xerox
- Zeon Chemicals

Research Facilities

An impressive array of research facilities is available. Most of those used by polymer science faculty and staff are located in the 146,000-square-foot Goodyear Polymer Center. More than 50 laboratories are equipped with modern tools for the synthesis of polymers, the study of polymer structure and properties, and the fabrication of new composite materials.

State-of-the-art instrumentation is available for NMR, FTIR and UV-visible spectroscopy; GPC; MALDI-TOF mass spectrometry, thermal analysis; rheo-optics; X-ray diffraction; and scanning probe, electron and fluorescence microscopy; laser capture microdissection, immunohistochemistry and related bioengineering techniques. Molecular modeling research is pursued using a range of powerful software and advanced computing hardware.

Capabilities for biomaterials and biomedical polymer research are growing rapidly. Class II cell and tissue facilities as well as advanced imaging and nanotechnology fabrication capabilities are available. New connections through the Austen BioInnovation Institute are providing greater access to animal facilities and clinical research infrastructure.

JOB PLACEMENT AFTER GRADUATION

Department of Polymer Science graduates enjoy a high job placement rate after receiving their degree – 100 percent placement within one year of graduation. This is made possible because most graduates either have secured a job before they graduate, or have one lined up once they’re out of school and ready to begin their career.
Events and Venues
Akron, Ohio

With a population of nearly 200,000, Akron is Ohio’s fifth-largest city. It offers a vibrant downtown, serene parks, shopping, events and venues that appeal to almost every interest. Its regional location and easy access to air and highway travel puts you at the hub of a world of experiences and opportunities.

About The University of Akron

The University of Akron, Ohio’s Polytechnic University, is the region’s most influential public research university, contributing to the resurgence of the local economy, providing a workforce highly trained in diverse disciplines, and known for an innovative approach to higher education. With nearly 26,000 students and more than 300 associate, bachelor’s, master’s, doctorate and law degree programs, UA offers career-focused and experiential learning that defines the polytechnic approach to education. UA brings together diverse disciplines in ways that provide students with life-long skills, internships and co-ops, opportunities for academic research, study abroad, on-campus student employment and service projects designed for diverse groups of learners, including full-time, part-time and online students, veterans, and adults returning to the classroom.

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