

Program in Polymer Science and Technology

The [Program in Polymer Science and Technology](#) (PPST), founded in 1986, is an interdepartmental program offering graduate education in the interdisciplinary field of polymer science and engineering. Its goals are to provide educational opportunities and to foster a spirit of community and collaboration among the large and widespread group of students, faculty, and visitors involved in polymer-related activities at MIT. PPST provides a core graduate curriculum on polymers; written and oral doctoral qualifying examinations; seminars presented by prominent visitors from industry, government agencies, and academia; and special student-driven events. The program is administered on a voluntary basis by faculty from the Departments of Materials Science and Engineering (DMSE), Chemical Engineering (ChemE), Mechanical Engineering, Biological Engineering (BE), and Chemistry.

Signs of increasing vitality and growth were evident in the program during AY2012. Its student roster increased from 16 to 19, with home departments in DMSE, Chemistry, and ChemE. The PPST Graduate Student Association successfully solicited Cabot Corporation and Lincoln Laboratory to help fund the first MIT Polymer Day, held on March 7, 2012. This event began with a polymer poster session that drew 52 participants and more than 150 attendees to Morss Hall, and concluded with three seminars presented by polymer researchers Joseph Walsh and Simon Haward and graduate student Adam Zeiger. The PPST faculty, holding steady at 19 members, continues to show sustained broad-based support from all the program's affiliated departments. In fall 2012, PPST will welcome six new students, representing four of its five affiliated departments, including one student from its newest affiliate, BE.

A number of PPST faculty garnered notable honors over the past year:

- Daniel Blankschtein and his students delivered talks and presented posters at the 242nd American Chemical Society (ACS) National Meeting, the 2011 American Institute of Chemical Engineers (AIChE) Annual Meeting, the DuPont Experimental Station, and Procter & Gamble headquarters.
- Robert Cohen was honored by ACS with its 2012 [Paul J. Flory Polymer Education Award](#) for his contributions to polymer science and engineering research and education at MIT and beyond.
- Patrick Doyle delivered invited lectures at the Microfluidics Gordon Research Conference, the Georgia Institute of Technology, Eidgenössische Technische Hochschul Zürich, the [NanoBioTech–Montreaux Conference](#), and the Asian Pacific Confederation of Chemical Engineering. Professor Doyle was awarded the Royal Society of Chemistry's (RCS's) 2102 Soft Matter Lectureship, which honors a younger scientist who has made a significant contribution to the soft matter field.
- Karen Gleason received the 2012 AIChE Process Development Research Award and, among other speaking honors, served as the inaugural lecturer at the Center for Applied Material Science at Pall Corporation.

- Paula Hammond was named a fellow of the ACS Division of Polymer Chemistry, was a co-organizer and coauthor of the National Science Foundation's [Biomaterials Workshop Report](#), and served as associate editor of the journal, ACS Nano.
- Bradley Olsen was awarded a 2012 Air Force Office of Scientific Research Young Investigator Award. His group filed two patent applications and one provisional patent application, and published three peer-reviewed papers on the topics of tissue engineering hydrogels, polymer dynamics, and block copolymer templated self-assembly of proteins.
- Christine Ortiz received a Massachusetts Governor's Citation in recognition of extraordinary support of the Latino community in Massachusetts, and a Woman of Courage Award from La Alianza Hispana. Professor Ortiz's invited lectures included the [MacCannell Memorial Lecture](#), the Page Morton Hunter Lectureship, and the Sigma Xi Distinguished Lectureship.
- Gregory Rutledge delivered invited, plenary, or keynote lectures in a variety of international venues, including Canada, China, Korea, Thailand, Japan, and the US. While in China, he was a guest of the vice governor of Jiangsu Province and the president of Jiangnan University.
- Timothy Swager was awarded [RSC's 2012 Centenary Prize](#) in recognition of "his creative genius in applying fundamental chemical principles to real-life problems, as illustrated by his invention of new materials for the selective detection of explosives."

Additionally, PPST is proud to note awards won by PPST/DMSE graduate student Charles Sing, who was a finalist for both the Materials Research Society's Graduate Student Award and the American Physical Society's Division of Polymer Physics Frank J. Padden Jr. Award. Sing was also winner of a DMSE Graduate Student Teaching Award, and recipient of an International Institute for Nanotechnology postdoctoral fellowship. He will be working with professor Monica Olvera de la Cruz at Northwestern University beginning in September 2012.

The PPST weekly seminar series was well attended during the past year and attracted an average of 50 to 80 students, faculty, and visitors per seminar. Lectures were presented by leading polymer faculty from a number of overseas and US universities. Professor Alfredo Alexander-Katz (DMSE) and Professor Olsen (ChemE) administer the seminars.

During AY2012, PPST experienced notable growth in recruitment, community-building, and fundraising. In the year ahead, the program looks forward to further strengthening its vitality, both as a dynamic interdisciplinary model for doctoral preparation and as an important nucleation point for the MIT polymer community.

Robert E. Cohen

Director

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