

## 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. It consists of a core curriculum, written and oral qualifying examinations for doctoral studies, and continuing education opportunities through seminars, visitors from industry and academia, and research competitions. Faculty from the Departments of Materials Science and Engineering, Chemical Engineering, Mechanical Engineering, and Chemistry administer the program. PPST also serves as a focal point for information and opportunities in polymer-related fields at MIT.

PPST continues to maintain a steady course. There were 26 students enrolled in PPST in AY2006, with home departments in Materials Science and Engineering, Chemical Engineering, and Mechanical Engineering. This year, the program graduated four students with a PhD degree: three from Materials Science and Engineering and one from Chemical Engineering. Six new PPST students were admitted into the program, four from the Department of Chemical Engineering and one each from the Department of Materials Science and Engineering and the Department of Mechanical Engineering. Faculty participation in PPST remains strong, with 16 core faculty and 11 affiliated faculty members.

The core curriculum remains focused around fundamental courses in physical chemistry and synthetic chemistry of polymers, biopolymers, and mechanical behavior of plastics. A project lab is also sometimes conducted during the independent activities period. Additional topics in polymer morphology, colloids and surface science, macromolecular hydrodynamics, and polymer statistical mechanics are alternated each year so that the full curriculum can be completed in four semesters.

The PPST weekly seminar is extremely well attended and continues to attract an average of 50–80 students, faculty, and visitors per seminar. This past year, leading polymer faculty from a number of US universities, government research labs, industry, and faculty and senior students within MIT presented lectures. Professor Patrick Doyle (Chemical Engineering) and Professor Darrell Irvine (Materials Science and Engineering) were in charge of organizing this seminar series and have agreed to continue for the coming year.

After four consecutive years of committed sponsorship of the OMNOVA Awards for Excellence in Polymer Research, for 2006 OMNOVA Solutions Foundation declined to fund the program due to Hurricane Katrina-related budgetary pressures. In 2005, the OMNOVA Award program achieved an unprecedented high point, with the first-time awarding of a third “Special Jury Prize” in addition to the usual two awardees. We hope that improved budgetary conditions and our successful history with OMNOVA will lead to a return of the OMNOVA Award program in spring 2007. In place of this, sponsorship from the Schlumberger Corporation has been obtained to help underwrite a student

poster competition open to PPST students and all students across MIT working in the field of polymer science and technology. This competition will take place as part of the PPST Twentieth Anniversary celebrations.

In his second year as PPST director, Professor Gareth McKinley of Mechanical Engineering has worked hard to continue increasing the visibility of PPST at MIT and beyond. A Dupont–MIT Alliance Fellowship has been secured for the program for the past two years, and attempts to recruit incoming students to PPST from additional departments at MIT are being made. This year offers were made to students in four departments. Professor McKinley looks forward to continuing efforts at broadening departmental participation within PPST and to guiding the program toward its 20th anniversary in September 2006. An alumni database has been established and a number of mailings have recently been sent to all alumni. A day-long symposium, “PPST at Twenty: Celebrating Twenty Years of Polymer Research and Education” featuring high-profile external speakers, as well as many alumni of the program, is planned for September 8, 2006.

**Gareth H. McKinley**  
**Director**  
**Professor of Mechanical Engineering**

*More information about the Program in Polymer Science and Technology can be found at <http://web.mit.edu/ppst/>.*