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. The program is administered by faculty from the Departments of Materials Science and Engineering, Chemical Engineering, Mechanical Engineering, and Chemistry. 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 28 students enrolled in PPST in AY2007, with home departments in materials science and engineering, chemical engineering, and mechanical engineering. This year, the program graduated four students with a PhD degree, two from materials science and engineering (Daeyeon Lee and Jessica Liao) and two from chemical engineering (Marianne Terrot and Nathan Vandesteeg). Four new PPST students were admitted into the program, all from the Department of Materials Science and Engineering. Faculty participation in PPST remains strong, with 14 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, and industry, as well as 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 Professor Irvine will continue to organize the seminars for the coming year in conjunction with Professor Krystyn Van Vliet (materials science and engineering).

A major success this year was our first ever alumni/ae reunion and symposium, held in honor of PPST's 20th anniversary on September 8, 2006. The day and evening-long event featured distinguished guest speakers, a poster competition sponsored by Schlumberger Corporation, and a gala dinner at Boston's Museum of Science.

In his third year as PPST director, Professor Gareth McKinley of mechanical engineering has worked hard to continue increasing the visibility of PPST at MIT and beyond. External sponsorship of the annual graduate student poster competition has again

been secured for the coming year from Schlumberger Corporation. A Dupont MIT Alliance fellowship has been secured for PPST for the past two years, and attempts are being made to recruit incoming students from additional departments at MIT. This year, students in three departments were offered admission. Professor McKinley looks forward to continuing efforts at broadening departmental participation within PPST.

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/.