

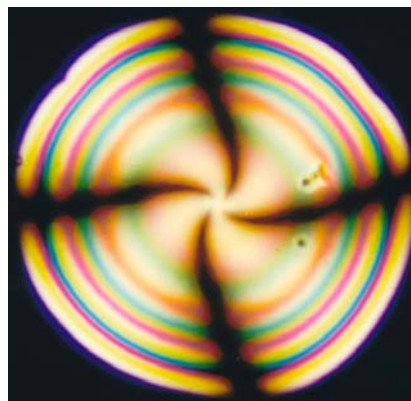
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MEMBERSHIP BENEFITS

- Campus Recruitment
- Reduced Services Fees
- Research Updates Semiannually
- Access to Polymer Expertise
- Use of Facilities
- Web Advertisement
- Quarterly Newsletter

Membership Application on-line or contact PTC.



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POLYMER TECHNOLOGY CENTER

SCRATCH BEHAVIOR OF
POLYMERS CONSORTIUM

&

POLYMER TECHNOLOGY
INDUSTRIAL CONSORTIUM

Texas A&M University
<http://ptc.tamu.edu>

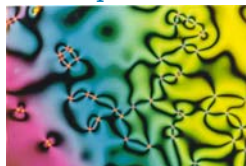
BACKGROUND

The Polymer Technology Center (PTC) encompasses faculty members from chemistry, chemical engineering, aerospace engineering, and mechanical engineering whose research topics are in the area of polymers and plastics.

Two industrial consortia, **PTIC** and **SCRATCH**, support operations of the PTC. Members of the consortia sponsor research projects both individually and jointly.

MISSION

The mission of the PTC is to be a source of trained engineers and scientists, and to provide a new technology and insight to the polymers industry. PTC serves to foster multi-disciplinary research within TAMU. The PTC also features an educational component of graduate and undergraduate courses and seminars on polymer-related topics.



VISION STATEMENTS

The Polymer Technology Center will:

- Provide new technology and insight to the polymers industry through focused and synergistic multidisciplinary approach
- Facilitate collaborative research efforts between university and industrial research addressing polymer issues in a fundamental way
- Offer training opportunities in polymer science and technology through continuing education, service, short courses and outreach programs

CONSORTIA

Two interdisciplinary Industrial Consortia are affiliated with the PTC. They support education, research and training in the specific area of polymer science and engineering.

PTIC

● **Created in 1986 to enable mutually beneficial interactivity between the PTC and the polymers industry, globally, nationally, and throughout Texas.**

SCRATCH

● **Created in 2001 to develop a physics-based mechanical model and then establish a generic structure-property relationship on scratch behaviors of polymers.**



PTC SCRATCH MACHINE III

RESEARCH EMPHASIS

- Scratch Behavior of Polymers & Coatings
- Strengthening and Toughening of Polymers & Composites
- Polymer Nanocomposites
- Molecular Dynamics Modeling
- Conductive Polymers
- Barrier Films
- Modeling of Viscoelastic Behavior of Polymers
- Biocompatible Polymers

LABORATORIES

- Electron Microscopy Center
- Mechanical Property Testing Laboratory
- Polymer Microstructural Analyses
- Polymer Nanocomposites Laboratory
- Polymer Processing Laboratory
- Polymer Rheology Laboratory
- Spectroscopy Laboratory
- X-Ray Scattering Laboratory

MECHANICAL TESTING EQUIPMENT

- Creep stations
- Film shear machines
- Haze Measurement
- Hysitron Tribointender (1 nN force resolution)
- Instron 1125 Universal Testing Machine
- Instron 1127 Universal Testing Machine
- MTS 810 Universal Testing Machine
- MTS 810 with #340 Load Frame
- Scratch Tester
- Sintech 2 Material Test System
- Slow crack growth / creep stations
- TMI Impact Testing Machine

CHARACTERIZATION EQUIPMENT

- Brookfield LVDV-III+ Viscometer
- Bruker X-Ray Machine
- Dynamic Mechanical Thermal Analyzer/Rheometrics RDSII: Dynamic Spectrometer
- Fourier Transform Infrared System
- HaakeBuchler Rheocord® System 40 Torque/ Capillary Rheometer
- Micro Hardness/Interfacial Testing System
- Microphotronics Ellipsometer
- Olympus BX60
- Perkin Elmer Pyris 1- Differential Scanning Calorimeter
- TA Instruments Thermomechanical Analyzer
- Total Internal Reflection Microscopy