



POLYMER TECHNOLOGY CENTER

Winter 2011 Edition



PTC Newsletter

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MARK YOUR CALENDAR FOR PTC'S UPCOMING CONFERENCES!

- April 7th—SCRATCH
@ Texas A & M University
- April 7th-8th—PTIC
@ Texas A & M University

APPEAL Consortium

Inaugural meeting for the APPEAL Consortium was held on January 19, 2011 at TAMU, with the following companies in attendance:

- Baker Hughes
- Cameron
- Halliburton
- Hoerbiger
- SBM Offshore

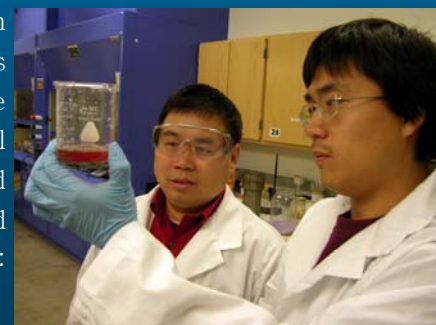
PTC held its semi-annual Polymer Technology Industrial Consortium (PTIC) meeting on October 28th—29th, 2010. The Attendees were:

- BASF—The Chemical Company
- The Dow Chemical Company
- ExxonMobil Chemical Company
- Flint Hills Resources
- Huntsman
- Kaneka
- Lyondellbasell Industries
- PolyLab, LLC
- SPE
- Texas State University
- Tokai Rubber Industries Ltd.
- Total American Services, Inc.
- University of Houston



Cheng's research links damaged organs to change in biochemical wave patterns

PTC faculty member, Dr. Zhengdong Cheng, from the Department of Chemical Engineering, has developed a model that simulates the distinctive wave patterns formed from complex biochemical reactions within the human body, which may lead to more effective ways of identifying diseased organs. To read the complete story please visit: <http://engineering.tamu.edu/news/2010/11/18/chengs-research-links-damaged-organs-to-change-in-biochemical-wave-patterns/>.

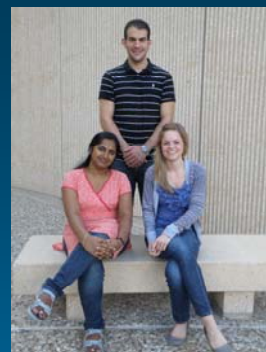


Associate professor Zhengdong Cheng (left) and graduate student Guanqun Wang discuss the addition of BZ catalyst to a resin.

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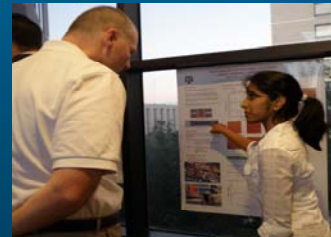
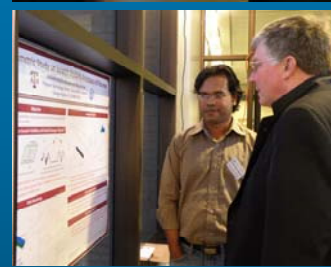
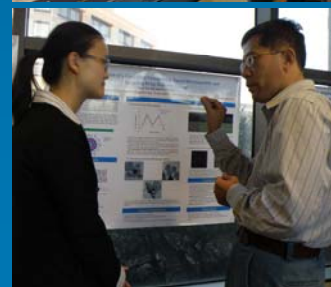
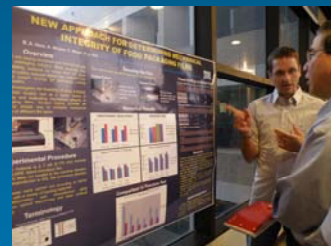
PTIC Student Poster Session Winners



1st	Philip M. Imbesi	CHEM	"Tunable, Amphiphilic Hyperbranched Fluoropolymers as Anti-biofouling Marine Coatings"
2nd	Brennan Bailey	MSEN	"Inorganic-Organic Hydrogel Scaffolds for Tissue Engineering"
3rd	Jayadurga Ganapathi	MEEN	"Magnetoactive Polymer Gels"

Polymer Technology Industrial Consortium (PTIC)
 October 28-29, 2010
 Student Poster Session

Student Name	Major	"POSTER TITLE"
1 Bedri Arman	CHEM	"Dynamic Response of Phenolic Resin and its Carbon -Nanotube Composites to Shock Wave Loading"
2 Brennan Margaret Bailey	MSEN	"Inorganic-Organic Hydrogel Scaffolds for Tissue Engineering"
3 Chungyeon Cho	MEEN	"Porous Polyelectrolyte Multilayers and Patterning of LbL Films"
4 Melissa Leanne Giese	BMEN	"Amphiphilic Silicones with Reduced Blood Protein Adsorption"
5 Brian A. Hare	MSEN	"New Method for Determining the Mechanical Integrity of Food Packaging Films"
6 Hsiu-Chin Huang	MEEN	"Order-disorder Transition of Ionic Cluster in Polyelectrolyte Multilayers Assembled with Self-Healing Ionomer"
7 Philip M. Imbesi	CHEM	"Tunable, Amphiphilic Hyperbranched FluoroPolymers as Anti-Biofouling Marine Coatings"
8 Jayadurga Iyer Ganapathi	MEEN	"Magnetoactive Polymer Gels"
9 Mohammad Hossain	MEEN	"FEM Parametric Study on Scratch Visibility Resistance of Polymers"
10 Peng Liu	MEEN	"Comparison Between the Erichsen Delta-Land ASTM/ISO Scratch Tests"
11 Zalak Purohit	MEEN	"Performance of Polymer Coatings Under Forming conditions"
12 Lin Shao	CHEN	"Layer-by-Layer Nanotubes of Polyaniline and Vanadium Pentoxide"
13 Lin Shao	CHEN	"Thermal Properties of Poly(allylamine Hydrochloride)/ Poly(acrylic acid) Layer-by-Layer Assemblies"
14 Xiao Yu	CHEN	"Development of a Core-Shell Nanoparticle Based Biocompatible and Targeting Drug Delivery System"



PTC appreciates and would like to thank all the students that participated in the PTIC student poster session. There will be another opportunity for you to compete in this event in the Spring, April 7th-8th, 2011.



TAMU NEWS



UT/TAMU Together for Texans

"Our public institutions of higher education, led by UT and A&M, are responsible for creating Texas' future as a welcoming place for employers and educated employees." So said the Houston Chronicle in a Dec. 19 editorial affirming the view that our state universities benefit all Texans. UT-Austin President Bill Powers and TAMU-College Station President Bowen

Loftin, visited with editorial boards and universities in several cities across the state as part of our Together for Texans initiative (www.orange-maroon.com). Read more at: <http://www.chron.com/disp/story.mpl/editorial/7347013.html>.

TAMU ranks 14th in Nation

Forbes magazine recently ranked Texas A&M 14th in the nation for helping racial and ethnic minority students succeed in academic programs in science, technology, engineering and math. Texas Tech was the only other Texas university listed. Read the full story at: <http://www.forbes.com/2010/12/10/best-colleges-minorities-women-science-lifestyle-education-stem.html>.



AGGIES HEADED TO THE COTTON BOWL!!!

The Texas A&M football team is Cotton Bowl-bound as Tuesday, November 30th, 2010 the Aggies were offered and accepted a bid to the 75th AT&T Cotton Bowl Classic which will take place at Cowboys Stadium on Jan. 7.

The Aggies (9-3, 6-2 Big 12) finished the 2010 regular season as one of college football's hottest teams with six consecutive victories and finished tied for first place in the Big 12 Conference's South Division.

The trip to the Cotton Bowl Classic will be the 12th all-time for the Texas A&M Aggies and their first since 2005. It also marks the second straight bowl appearance for Texas A&M under head coach Mike Sherman.

Unfortunately, the Texas A&M Aggies lost to the LSU Tigers 41-24. TAMU fans left the game optimistic about next year. Some fans indicated that staying competitive was important and the Aggies did that until late in the game.

PTC NEWS

International Experts Honored Distinguished Professor Dr. Kumbakonam Rajagopal with College Station symposium

Thirty-seven experts in continuum mechanics from the United States, Canada and as far away as Japan and South Africa gathered in College Station to honor Texas A&M University mechanical engineer Distinguished Professor Dr. Kumbakonam Rajagopal on his 60th birthday.



Distinguished Professor
Dr. Kumbakonam Rajagopal

Symposium sessions were held in Rudder Tower on the Texas A&M campus and at the College Station Hilton Hotel and Conference Center on November 11-13. Presentations by the visiting experts will focus on the general topic, "Perambulation of Continuum Mechanics."

To read more about this story, please visit: <http://engineering.tamu.edu/news/2010/11/05/international-experts-to-honor-rajagopal-with-college-station-symposium/>



PTC's Post Doctoral Dr. Yi-Ling (Ivan) Liang is recruited by The Dow Chemical Company

Dr. Yi-Ling (Ivan) Liang joined PTC as a post-doctoral research associate since Aug, 09. His research interest for the past year and a half focused on the scratch resistance and the related structure-property relationships in styrenic copolymers. At the end of February 2011, he will leave TAMU for a position in the Epoxy R&D Department at The Dow Chemical Company, and will perform the composite related research in Freeport, TX. Dr. Liang is highly grateful for the supports from every PTC members. He quotes: "First, I would like to thank Dr. H. J. Sue's insightful advice that facilitates my exploring in new research topics. It is really enjoyable to work with so many talented people in PTC. I cherish the experience and friendships I gained here, since they are certainly beneficial for my future career."

PTC's Zhen Liu



PTC's web-master and senior marketing major Zhen Liu played Timbaland's Apologize on the violin on Sunday, November 21, 2010 in

Rudder Auditorium. This act was part of Fade 2 Black's Fall show. This was also posted in The Battalion.

PTC Faculty



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“Sophisticated Plastics: Diverse opportunities—from materials to medicine—for well-defined polymer chemistry”

By Dr. Karen Wooley, Department of Chemistry
CHEN 111 on November 1, 2010 @ 6pm

Contrary to the general perception of polymers as commodity plastics, polymer science has advanced significantly to the point of having capabilities to produce highly-sophisticated, functional organic materials. This presentation will highlight the controlled polymerization of small molecule monomers and subsequent modification chemistries that are used to prepare well-defined polymer structures, and will detail their use as building blocks for the assembly of functional nanostructured materials. Synthetic methodologies have been developed for their construction as discrete nanoparticles in solution, with control over the composition, size, shape and morphology, or as bulk, multi-compartment materials in the solid state. The containment and signaling characteristics of nanoscale objects in water will be shown to provide utility for several medical applications, including gene delivery, infectious disease treatment, and cancer therapy. Transformation of intentionally-heterogeneous polymer structures and mixtures into crosslinked networks will be illustrated as a technique to create micro- and nanoscopically complex surface coatings that behave as treacherous terrain to inhibit marine biofouling. With the diversity and control that are available, many other synthetic targets can be imagined.



“Performance Characteristics of New Film Options for TPO”

By Kip Swain

Material Development Manager, Mytex Polymers
Monday, December 6 @ 6pm @ CHEN 111

Purpose

To provide an overview of two new decorative films in terms of physical properties, grind behavior, processing characteristics and surface performance comparison to general high gloss and paint options.

Design/methodology/approach

The presentation embodies the work conducted in the validation trials of two new dry paint film and clear capping film options coupled with new high melt strength TPO in a demanding, performance Class A application.

Findings & Practical Implications

Provides information on the technical advantages with regards to scratch & mar resistance, gloss, and DOI coupled with TPO for this technology sheet system and outlines the performance of varying level of grind benefits open to design engineers.



To find out more about the TAMU/SPE Student Chapter please contact Casie Hillard, at:

chilliard@mail.chem.tam.u.edu



Casie Hillard,
President of SPE Student
Chapter

Polymer Specialty Certificate Updates

Students that have applied for Certificate	19
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For more information:

<http://ptc.tam.u.edu/certificate.html>

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