



NEWSLETTER

Oklahoma Section

Volume 16 Number 2

<http://oklahoma.sites.acs.org/>

May 2010

Section Meeting & Awards Banquet
Thursday 20 May 2010

**POLYMER PHYSICS AND POLYMER CHEMISTRY:
WHY DO POLYMERS BEHAVE DIFFERENTLY
FROM OTHER MATERIALS AND FROM EACH OTHER**

Dr. Alan Tonelli
*INVISTA Professor of Fiber & Polymer Chemistry
North Carolina State University*

We seek an understanding of the unique properties exhibited by materials made from polymers, because of their high molecular weights and long-chain natures. Among these are rubber-like elasticity, time-dependent flow and mechanical properties, and two-phase crystalline and amorphous morphologies. All polymers, regardless of the detailed chemical structures of their repeat units, can exhibit such behaviors which distinguish them from atomic and small-molecule materials. Their long chains permit polymers to assume an almost limitless number of conformations and overall sizes and shapes via facile backbone bond rotations, thus giving them an internal degree of freedom to respond to stresses or their environment. This internal or intra-chain degree of freedom is unavailable to small-molecule or atomic materials, and results in the unique behaviors of polymers, which we call polymer physics. On the other hand, the wide range of behaviors exhibited by different polymers is termed polymer chemistry, because of their chemically distinct repeat units or microstructures. By taking account of the detailed microstructures of polymers, since these govern their backbone rotations, conformations, and overall sizes and shapes, their internal responses to stresses and their environments, i.e., their properties, can be both understood and distinguished from one another.



6:00-6:30 pm	Social Hour	Conference South
6:30-7:30 pm	Dinner	Conference South
7:30-8:30 pm	Presentation	Conference South

Oklahoma State University – Oklahoma City
Student Center 3rd Floor, Conference South
900 N. Portland Ave, Oklahoma City, OK 73107
map: <http://www.osuokc.edu/map/default.aspx>

**2010 Oklahoma Chemist
of the Year**

DR. JITEN CHATTERJI



Dr. Jiten Chatterji is the 2010 Oklahoma Chemist Awardee. He was born in India and graduated with a bachelor's and master's degree in chemistry from the University of Bihar. He attended the University of Wyoming and earned a Ph.D. in Physical Organic chemistry under Dr. Rhodes in 1967. He was employed as a Developmental Chemist by Halliburton Energy Services and began working in the fracturing section starting on June 5, 1967. He retired from Halliburton as a Senior Scientific Advisor on December 31, 2009. This rank at retirement was the highest which Halliburton awards to its employees.

The major accomplishments in his last position included setting up drilling fluids; introduction of defoamers; high temperature fluid loss additives; biodegradable cement dispersants; high temperature stable cement foamers; salt tolerant latex systems; use of kiln dust to reduce the carbon footprint; non-dispersing high temperature cement retarders and lost circulation materials.

His impressive record of more than 176 active USA patents and 55 active foreign patents as well as his skills in oil field cementing are legendary. As one of his support letters indicated, Dr. Chatterji's work on cement retarders and slurried cement retarders has led to millions of pounds being sold each year. The total volume of revenue and jobs created by this work is essentially unmeasurable. He has also played a major role in the development of hydralulic-fracturing technology which enables industry to operate marginal oil wells. He has been labeled as a superior leader by his colleagues at Halliburton and by others in companies which have utilized the technology which Dr. Chatterji created.

See page 2 for reservation information and the speaker's biographic sketch. →

Councilor's Report from the Spring 2010 National Conference

Allen Aplett (Oklahoma Section Councilor)

The Oklahoma Section was nominated local section was nominated for the 2009 Speaker Service Hospitality Award for outstanding performance while hosting an ACS tour speaker! Nominations are judged on how well the local section prepared for the speaker's visit including, but not limited to, publicity efforts, local arrangements, communications with the speaker, and success of the meeting. The winners were announced at the Local Sections Reception at the San Francisco meeting. Unfortunately, we were not among the winners but it was a distinct honor to be nominated.

The following is as summary of the key actions of the ACS Council at the 2010 spring national meeting.

Election Results

The Committee on Nominations and Elections presented to the Council the following nominees for selection as candidates for President-Elect, 2011: Luis A. Echegoyen, John P. Fackler, Jr., and Bassam Z. Shakhashiri. By electronic ballot, the Council selected Luis A. Echegoyen and Bassam Z. Shakhashiri as candidates for 2011 President-Elect. These two candidates, along with any candidates selected via petitions, will stand for election in the Fall National Election.

Petitions to Amend the Constitution and Bylaws

The Council received three amendments to the ACS Constitution and Bylaws for action: The Petition on Admissions Committee, the Petition on Candidate Selection by Member Petition, and the Petition on Election Timelines 2009.

The Council VOTED to approve the Petition on Admissions Committee. This petition removes the Admission Committee from the Bylaws and transfers its functions to the Council Committee on Membership Affairs.

After considerable debate, a motion to approve the Petition on Candidate Selection by Member Petition FAILED. The Petition on Candidate Selection by Member Petition would have amended the Constitution to emphasize that candidates selected by a petition process from members will have no further screening.

The Council also thoroughly debated the merits of the Petition on Election Timelines 2009. The motion to approve this petition FAILED. The Petition on Election Timelines 2009 would have shortened certain national election timelines.

The Board of Directors will vote within 90 days on whether to ratify the Petition on Admissions Committee.

2011 Member Dues

The Council VOTED to set the member dues for 2011 at the fully escalated rate of \$146. This rate is established pursuant to an inflation-adjustment formula in the ACS Constitution and Bylaws.

Local Section Allotment Calculator

The Council VOTED to continue for three years the current formula for determining allotments to local sections.

(continued from front page)

Dinner Reservation Information

Menu	Cost
Honey Baked Ham	\$20 members
Southern Fried Chicken	\$5 students
Garlic Mashed Potatoes	
Green Beans Almandine	RSVP Deadline
Snow Peas & Carrots	Friday 14 May 5 pm
Garden Salad	Contact: Sherri Tsoodle
Peach Cobbler	405-945-9112
	stsoodl@osuokc.edu

RSVP is NOT required to attend the presentation.

Dr. Alan Tonelli Biographical Sketch

B.S. in Chemical Engineering from the University of Kansas in 1964 and a Ph.D. in Polymer Chemistry from Stanford in 1968, where he was associated with the late Professor Paul J. Flory. He was a member of the Polymer Chemistry Research Department at AT&T Bell Laboratories, Murray Hill, N.J. for 23 years, and in 1991 joined the Fiber and Polymer Science Program in the College of Textiles at North Carolina State University in Raleigh.

Did you know we also distribute the newsletter and information on section activities by email?

The Oklahoma Section communicates with its membership through several channels, including: email, this printed newsletter, and our web page. If you haven't been getting notifications of up coming meetings and other section activities by email, perhaps we do not have your current email address.

We use the email address list obtained from and maintained by the ACS. There are 3 different ways you can update your information.

- 1) Log in to the ACS website (www.acs.org) and edit your profile
—via the *Edit My Profile* link located under the welcome banner after you login.
- 2) Phone the ACS Customer Service team (1-800-333-9511).
- 3) Send an email to the ACS Customer Service team (service@acs.org).

Help us keep in touch!

—The Oklahoma Section of the ACS Executive Committee

Our Website has recently changed. Check out the new site!

<http://oklahoma.sites.acs.org/>

2010 Service Milestones

Our section is pleased to honor seven members for 50 years of service and three members for 60 years of service.

50 Years of Service

- Dr. Kenneth Brown, Alva OK
- Dr. Raul Carubelli, OKC
- Dr. William Dunlap, OK
- Dr. David Hart, OKC
- Dr. Eddie Smith, Norman OK
- Dr. Jordan Tang, OKC
- Mr. John Todd, OKC

60 years of Service

- Dr. Howard Bost, Edmond OK
- Dr. Norman Fogel, Norman, OK
- Dr. Gilbert Mains, Stillwater, OK

2010 Chemistry Olympiad Winners

- Benjamin Cassidy (OSSM)
- Irving Dai (OSSM)
- Jeffrey Gillean (Moore)
- Jessica Oehrlein (Westmoore)
- Clint Shepherd (Moore)
- Qisi Sun (Edmond North)
- Philip White (Edmond North)

A look back at the 55th Annual Pentasectional Sectional Meeting

Saturday 10 April 2010
Embassy Suites Hotel & Conference Center, Norman, OK.

Deadlines

Abstract Submission: 12 Mar (extended to 26 Mar)
Preregistration: 26 Mar

Registration Rates (pre-registration/late & on site)

Regular (\$60/75)
Students and Precollege Teachers (\$30/40)

We had outstanding attendance and participation with over 280 registrants, 91 talks, 80 posters, and more than 15 sponsors and exhibitors. There were over 15 technical sessions. The response was so overwhelming, that we needed to add two extra rooms to accommodate all the sessions. The luncheon speaker was Steve Paris from OCAST.

We thank the organizers of the conference and session chairs for their work which made the conference a success. Special recognition goes to Chuck Rice (conference chair) for his tireless effort. Chuck took care of all the local arrangements with the venue and the session chairs, as well as recruiting the sponsors. Nick Materer was the presence behind the web registration. He worked to adapt the software for our purposes and then performed the non-trivial task of extracting the information for the conference program book.

The 56th Annual Pentasectional Meeting will be hosted by the Northeast Section (Bartlesville) in 2011.

2010 Pentasectional Poster Awards

Awards were given to the best posters presented at the 55th Annual Pentasectional Meeting. Awards were given in each of two categories: undergraduate poster and graduate poster. In each category, the first place winner received an iTunes card plus a Merck Index. In each category there were 3 Honorable Mentions, each receiving a Merck index. (8 total awards).

GRADUATE CATEGORY

1st Place Winner

- Matt Wulfers, *Catalytic Isomerization of n-Butane on H-Mordenite: Influence of Hydrogen Partial Pressure* (OU, CBME).

Honorable Mention

- Tushara Athauda, *Capillary electrophoresis separations of nanoparticles* (TU, Chemistry and Biochemistry).
- Lance Gill, *Glass Transitions, Segmental Dynamics, and Friction Coefficients for Individual Polymers in Multicomponent Polymer Systems by Chain-Level Experiments* (OSU, Chemistry and Biochemistry).
- Matt Meredith, *New Biofuel Cell Anode Materials Based on Linear Poly(ethylenimine) and Ferrocene* (OU, Chemistry and Biochemistry).

UNDERGRADUATE CATEGORY

1st Place Winner

- Dustin Sprouse, *Synthesis of Resveratrol* (ORU, Biology and Chemistry).

Honorable Mention

- Robert Headrick, *Characterization of Multiwalled carbon nanotube polymer composites* (OU, Engineering).
- David Hickey, *Synthesis of Ferrocene-Modified Polypyrrole for Application as a Molecular Wire in REDOX Polymer Biosensors* (OU, Chemistry and Biochemistry).
- Jacob Hostetler, *Altered Sensitivity to MDMA in Mice Made Tolerant to the Hallucinogen DOI* (ORU, Biology and Chemistry).

2010 Oklahoma ACS Section Officers and Standing Committee Chairs

Nicholas F. Materer	Chair
Amanda J. Nichols	Chair Elect
Lloyd A. Bumm	Immediate Past Chair + Secretary
Kenneth H. Brown	Treasurer
Allen Applebtt	Councilor + Nominations Com.
Donna J. Nelson	Alternate Councilor
Charles V. Rice	Awards Com.
Edward Neparko	Newsletter + Publications. Com.
Nathan Malmberg	Chemistry Olympiad Com.
Valerie Ferguson	National Chemistry Week Com.
Cheryl Frech	Public Relations
Jim Dechter	Web Master



L. A. Bumm
Oklahoma Section of the ACS
Homer L Dodge Dept of Physics & Astronomy
The University of Oklahoma
440 W Brooks St
Norman, OK 73019-2061

Nonprofit Organization
U.S. Postage Paid
The University of Oklahoma
Norman, OK
Permit No. 88

Oklahoma ACS 2010 Calendar of Events.

Visit the Oklahoma ACS WWW site for the latest information.
<http://oklahoma.sites.acs.org/>

- May 20 (Thu)** local section meeting and awards banquet
Oklahoma State University—Oklahoma City
Dr. Alan Tonelli, *North Carolina State University*
Polymer Physics and Polymer Chemistry: Why do Polymers Behave Differently From Other Materials and From Each Other
- Sep 23 (Thu)** local section meeting and family night
topic and location TBA
- Oct 14 (Thu)** local section meeting
location TBA
Speaker Donald Burland, *National Science Foundation (retired)*
Industrial Research An Oxymoron or a Necessity
- Oct 17-23** NATIONAL CHEMISTRY WEEK
- Nov 10 (Wed)** local section meeting
location TBA
Speaker John Fortman, *Wayne State University*
Updated Versions of Some of Faraday's Demonstrations Used with His Christmas Lectures on the Chemical History of a Candle