



American Chemical Society Wichita Section

May 2010 Newsletter
Stephen Donnelly, Editor

Section Meeting
Tuesday, 18 May, 7:00 PM
Broadhurst Student Center
Central Christian College
McPherson, Kansas

Meal (optional): 6:00 p.m.

The meal will be served in the Alumni Dining Room of the Broadhurst Student Center on the campus of Central Christian College. The cost is \$12.50 per person, and the section will pick up half the cost for students. Cash or checks made out to the ACS Wichita Section will be collected before the meal. RSVP to Robin Jackson by 14 May – her contact information is listed below.

Meeting: 7:00 p.m.,

The meeting will take place in the Reimer Business Center, room 1134 on the CCC campus. Dr. Alan Tonelli will give a presentation on polymers.

Directions:

Central Christian University, 1200 S. Main Street, McPherson

From I-135 take exit 60, U.S. Highway 56 west to Main Street in McPherson. Turn left (south) on to Main Street. Turn right (west) on to avenue D. After one block turn left (south) onto Maple Street. The Broadhurst Student Center is on the right between Avenues E and F.

See also: <http://www.centralchristian.edu/aboutcampusmap.html>

Speaker: Dr. Alan Tonelli

Title: *Polymers: The Chemistry of Commerce and Life*

The high molecular weight, long-chain natures of polymers are used to explain why polymer materials dominate commerce and nature. Unlike materials made exclusively from small-molecules or atoms, polymeric materials possess an additional degree of freedom by which they can respond to their environments. Their long-chains have the ability to dramatically alter both their over all sizes and shapes in response to the environment in which they are placed and/or the stresses to which they are subjected. Facile rotation about their backbone bonds confers upon polymers an internal degree of freedom which allows them to adopt a myriad of sizes and shapes. Unlike small-molecule and atomic ma-

terials, which may only respond by altering their intermolecular or interatomic spatial arrangements, polymer chains can in addition uniquely respond internally by changing their intramolecular sizes and shapes. The singular internal flexibility of polymers is utilized to explain their unique properties as exhibited by both man-made synthetic polymers and naturally-occurring biopolymers. For example, it is concluded that life is critically dependent upon the ability of biopolymers to undergo intramolecular, single-chain conformational phase transitions in order to organize into the complex bio-materials found in nature.

Speaker Bio:

Educational Background B.S.(with distinction)U. of Kansas, Chemical Engineering,1964 Ph. D.(with P. J. Flory)Stanford, Polymer Chemistry, 1968 Employment Member of Technical Staff Polymer Chemistry Research Dept. AT&T-BELL Labs. 9/68 - 8/91 Assoc. Prof. Textile Engineering, Chemistry, and Science, College of Textiles, North Carolina State University 8/91 - 8/94 Professor 8/94 - 7/96 Hoechst-Trevira Professor of Fiber & Polymer Science 7/96 - 9/99 KoSa Professor of Polymer Science 8/99 to date. Honors Tau Beta Pi; Sigma Xi; Outstanding undergraduate in Physical Chemistry at U. of Kansas - 1963; NSF Coop. Graduate Research Fellowship at Stanford - 1964-1966; Distinguished Technical Staff Award(1983), Extraordinary Achievement Award(1985,1987) at AT+T-BELL Labs.; Elected Fellow of the American Physical Society in 1989. Professional Activities Member of American Chemical(Polymer Chemistry Div.) and American Physical (Polymer Physics Div.) Societies. Founding member of the North Jersey Regional Science Fair for H.S. students. Chairman of Polymer Topical Group North Jersey local section of American Chemical Society in 1980. Organized and Chaired Undergraduate Research Symposium under the auspices of the North Jersey section of ACS in 1981. Tour speaker for the American Chemical Society 1986, 1988. Chairman-elect and Program Chairman for the North Carolina Polymer Group of the American Chemical Society 1992-93. Chairman of the North Carolina Polymer Group of the American Chemical Society 1993-94. Director of Polymer & Textile Chemistry Program, College of Textiles, North Carolina State University 1995-98. Supervised the research programs of 30 undergraduate, 20 graduate, and 8 Post-Doctoral Students. Editorial Boards of Macromolecules(1984-1986) and Comp. and Theor. Polym. Sci.(1991-2001). Publications More than 250 publications including two books ("NMR Spectroscopy and Polymer Microstructure: The Conformational Connection", Wiley, 1989; "Polymers From the Inside Out; An Introduction to Macromolecules", Wiley, 2001) and Several (25+) book chapters. Example: "Creation of Novel Polymer materials by Processing with Inclusion Compounds", L. Huang, M. Gerber, H. Taylor, J. Lu, E. Tapaszi, M. Wutkowski, M. Hill, C. Lewis, A. Harvey, A. Herndon, M. Wei, C. C. Rusa, and A. E. Tonelli, Macromol. Symp., 176, 129, 2001. Consulting Exxon-Mobil, Eastman, The Polymer Processing Institute, and National Starch

Chair's Message

Greetings to the Wichita Local Section!

Those of you in attendance at the April meeting enjoyed a great presentation by Dr. Ariel Fenster

from McGill University, Montreal, Canada concerning GMO's. We enjoyed a great dinner and presentation about a timely topic. Student awards and 50-year member awards were also given.

Please join us on Tuesday, May 18, for another timely topic: Polymers: The Chemistry of Commerce and Life by Dr. Alan Tonelli. Dinner will be served at 6:00 P.M. with the talk immediately following at 7:00 P.M. on the Central Christian College Campus in the ADR, and the lecture in the Reimer Business Center, 1134. Cost for the dinner will be \$12.50, with the section paying half the cost for student meals.

In the history of Chemistry, May is right in step with the topic for our next section meeting. On May 1, 1839, French chemist Hilarie Chardonnet was born. Chardonnet developed the first artificial rayon fiber "accidentally" while searching for a substitute for silk. On May 2, 1979, Giulio Natta died. Natta shared the 1963 Nobel Prize in Chemistry with Karl Ziegler for their work creating polymer chains using the Ziegler-Natta catalyst. The polymer they created, polypropylene, became the most widely used polymer: plastics!

Don't miss out on the May meeting!

Sincerely,

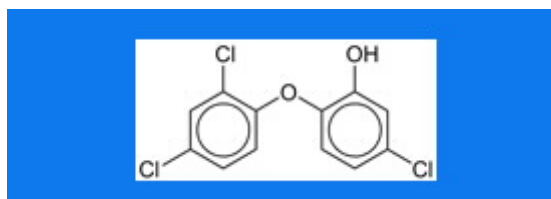
Robin Jackson, Chair ACS Wichita Section

Position Available...

Certified Environmental Management, Ltd.

ISO 17025 Laboratory looking for BS/BA Chemist/Biologist/or Engineer to work within a fully accredited AIHA laboratory. Applicant must be willing to travel once/month for a week. Laboratory experience desirable, computer skills and communication skills are essential along with impeccable ethics and integrity. Please submit application to CEM, Ltd., P.O. Box 504, Salina, KS 67401. Review company background at www.cemih.com.

Molecule of the Week



[5-chloro-2-(2,4-dichlorophenoxy)phenol] or Triclosan is an antibacterial and antifungal agent that has been used since the early 1970s. It was first described by E. Model and J. Bindler in 1964. It is used in consumer products ranging from toothpaste to deodorants to toys. The safety and effectiveness of triclosan recently have come under scrutiny, and the US Environmental Protection Agency and Food and Drug Administration have initiated efforts to reexamine its health risks.

Wichita Section Web Site:

<http://membership.acs.org/w/Wichita/>

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