



NEWSLETTER

Oklahoma Section American Chemical Society

Volume 12 Number 2

April 1, 2006

Biodegradable Wrapping Films

Monday – April 24, 2006
Stephenson Research & Technology Center
The University of Oklahoma
Norman OK

Dr. Attila E. Pavlath

Western Regional Research Center
US Department of Agriculture
800 Buchanan
Albany CA 94710

Artificial wrapping films, e.g. polyethylene take 200 years to biodegrade and create serious environmental problems. On the other hand, agricultural polymers biodegrade easily, but they are difficult to mold and the physical strength of the forming films is inferior. Two new methods were developed to overcome these difficulties. One is to start out with low molecular weight water soluble acidic carbohydrates, such as pectin or alginic acid, and crosslink the forming films with multivalent ions to form ionomers. The other is to depolymerize reversible high molecular weight polymers and rebuild the macromolecule after molding or extrusion. Especially cysteine containing proteins are suitable for this. In both cases the forming films are biodegradable and equal or stronger than polyethylene films.. ..



[Reservation Information on Page 2]

Schedule:

6:00 PM Social Hour: Stephenson Research & Technology Center
The University of Oklahoma

7:00 PM Dinner: Atrium - Stephenson Research & Technology Center
The University of Oklahoma

8:00 PM Speaker: Dr. Attila E. Pavlath

Menu: Sliced Lean Beef Brisket and Peppered Turkey Breast,, with rosemary and garlic roasted red potatoes;
baked beans; cole slaw; Iced Tea; Coffee; Water. [Catered from Coach's BBQ in Norman]

Cost: \$15.00-ACS Member; \$12.00-ACS Student Affiliate.

Reservation Deadline: Wednesday, 19 April, 2006; 4:00 p.m. Charles Rice:
405.325.5831 rice@ou.edu

Dr. Attila E. Pavlath

Dr. Attila E. Pavlath received his education at the Technical University of Budapest in Hungary, where he became assistant professor. In 1956, he left Hungary first for Montreal, Canada [McGill University], then in 1958, he joined Stauffer Chemical Company in Richmond, California. Since 1967, he has been with the Western Regional Research Center of the U.S. Department of Agriculture, in Albany, California. He is leading a group involved in research on various agricultural chemical problems. Dr. Pavlath's scientific career includes work on fluorine chemistry [30+ years], glow discharge chemistry [10+ years], textile chemistry [10 years], energy and biomass research (10 years), the freshness in fruits and vegetables [10 years] and most recently on biodegradable wrapping films. He has published over 120 scientific papers on these subjects, three books and has presented numerous lectures in the U.S. and abroad. He also holds 25 patents. Dr. Pavlath is also well-known for his activities in the ACS during the past 35 years to make the ACS more responsive to the professional needs of its members. He rose from his Section's Treasurer to the Presidency of the whole ACS.

Stephenson Research & Technology Center

SRTC is located on the OU Research Campus. When you get to Norman, take State Hwy 9 eastbound exit [to Tecumseh], which when driving southbound is shared with the Lindsey Ave exit. Take State Hwy 9 eastbound, crossing several traffic lights --24th, McGee, Imhoff, Chautauqua -- and then you will come to a traffic light at Jenkins Ave. Turn left [northbound] onto Jenkins.

The Stephenson Research & Technology Center [also referred to as SRTC] is on the east side of Jenkins, between David L. Boren Blvd and Columbus, just north of the construction site for the new National Weather Center building.

Maps and additional information are available at <http://cheminfo.chem.ou.edu>

Note On Parking: Just south of the Stephenson Research and Technology Center [SRTC], but north of State Hwy 9, is a large construction site, which when completed will be the new National Weather Center [NWC]. There is an east-west street between SRTC and the NWC construction site called David L. Boren Blvd., and another cross street just north of SRTC [Columbus]. To park, take either of these streets into the SRTC parking lot. Once parked, go to the main entrance on the north side of SRTC.

New Student Awards

The Oklahoma Section recently created two new awards for undergraduate students. The Terrill Smith Travel Award is designed for undergraduates to travel to a regional or national ACS meeting to present a paper or poster. Two awards of up to \$600 will be awarded each year, one for fall travel and one for spring travel. This award is named in honor of Dr. Terrill [Terry] Smith, longtime Oklahoma Section officer and councilor, who retired from UCO in 1999. Terry was a strong supporter of undergraduate research and student affiliates at UCO and in the section.

The Roger Baldwin Graduate School Award is designed for undergraduate students who have been accepted to attend graduate school in the chemical sciences. One award of \$500 will be presented each spring. This award is named in honor of Dr. Roger Baldwin, another longtime Oklahoma Section officer who is retired from Kerr McGee Corporation. The section is able to offer these new awards partially due to Roger's persistent fund-raising efforts associated with the Southwest Regional Meeting in 2003.

Applications for both awards are available from Section officers or on our website, <http://membership.acs.org/O/Oklahoma/Index.htm>. For more information about these awards, contact Gordon Eggleton, geggleton@sosu.edu.

The Gasoline Follies**

Gasoline prices are rising again, and this time, Iraq or hurricanes aren't to blame. Congress's energy policy mistakes are finally catching up with it, and American drivers are paying for the bungles.

The average U.S. retail pump price for gasoline has been hovering around \$2.50 a gallon the past few weeks; prices are now at their highest since last October – or back when the country was dealing with Katrina. The Federal Energy Information Administration [EIA] has warned that this may only be the beginning, and parts of the country could see pump prices well over \$3 a gallon going into summer.

Drivers can send their thank-you notes to Capitol Hill, which created the conditions for this mess last summer with its latest energy bill. That legislation contained a sop to Midwest corn farmers in the form of a huge new ethanol mandate that began this year and requires drivers to consume 7.5 billion gallons a year by 2012. At the same time, Congress refused to include liability protection for producers of MTBE, a rival oxygen fuel-additive that has become a tort liability. So MTBE makers are pulling out, ethanol makers can't make up the difference quickly enough, and gas supplies are getting squeezed.

It didn't take an economics degree to see this coming. The MTBE industry's defense is the many lawsuits claiming its product contaminated water supplies is that since 1990 the government has required use of oxygenates like MTBE. But with that requirement expiring in May, producers and refiners will face far greater liability, which has set off a race to exit the market. Valero, one of the largest manufacturers, has already announced plans to phase out production. Even the pipeline operators that carry MTBE to high-use areas in the Northeast are backing away.

The bigger question is whether all this newly mandated ethanol – the subsidized profits of which are funneled to Midwest farmers and agribusiness giants like ADM – will even make it to its destination. Unlike MTBE, ethanol can't be shipped ready-made through pipes. Instead it must be trucked or carried by rail from

Midwest to terminals near its ultimate selling point, where it then must be blended with a special unfinished fuel that is shipped separately through pipelines.

Imports could help, though the domestic ethanol industry has made sure those also come at a dear price. Ethanol imports are subject to a 2.5% tariff and a second duty of 54¢/gallon. This is particularly unfortunate for Texas or East Coast residents, who'd benefit greatly if they could get their ethanol [duty free] from local ports rather than pay to have it trucked across the country.

As it is, the U.S. already produces more ethanol than Brazil, and even today's four-million gallon requirement is clearly straining the industry. Increasing ethanol use much beyond the 2012 mandate is going to require that entire states be planted with corn and sugar cane, or a scientific breakthrough involving biomass and grass. Meantime, prepare to pay more for gas.

This ethanol MTBE fiasco is just the latest example of what happens when Congress holds energy markets hostage to narrow special interests. If Republicans on Capitol Hill wonder why their approval ratings stay low as gasoline prices rise this spring and summer, we suggest they look in the mirror.

** Selected paragraphs
The Gasoline Follies
The Wall Street Journal Editorial Page
March 28, 2006/Page A20

You may also wish to read:

Bush Promotes Alternative Fuel

C&E News March 6, 2006 / Page 50

Oklahoma Section 2006 Meeting Schedule

May: Date: Monday, May 15, 2006. [Olympiad Awardees Honored]

Location: TBA

Speaker: TBA

September: OBU at Shawnee [Annual Family Meeting]

Speaker: Probably Sherry Marshall from The Omniplex

Date: TBA

October: Date: TBA

Speaker: TBA

Location: TBA

November: Date: TBA [Usually Honor Section 50 Year Members]

Speaker: Chemist of the Year-Neil Purdie

Location: OSU

April 2006 Section Meeting

Monday 24 April, 2006

**University of Oklahoma/Norman
Stephenson Research & Technology Center**

Speaker: Dr. Attila E. Pavlath

Biodegradable Wrapping Films.



Oklahoma Section ACS
Southwestern Oklahoma
State University
100 Campus Drive
Weatherford OK 73096-3098

Nonprofit Organization
U.S. Postage Paid
Weatherford OK
Permit No. 1092