



THE FILTER PRESS

Newsletter of the Georgia Section of the American Chemical Society

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September 2007

Fuels and Chemicals from Biomass

Dr. Badal Saha, USDA-ARS

National Center for Agricultural Utilization Research

September Meeting, joint with AICHE: Monday, September 24, 2007

In the U.S., the production of corn grain based ethanol reached 4.5 billion gallons in 2005, a fraction of the 140 billion gallons of transportation fuel used annually. The goal is to displace 30% of the nation's current gasoline use with ethanol by 2030 and this will require production levels equal to roughly 60 billion gallons a year. If all corn grain now grown in the US is converted to ethanol, it can satisfy approximately 15% of current transportation fuel needs. Thus, developing ethanol as fuel, beyond its current role as fuel oxygenate, will require developing lignocellulosic biomass as feedstock because of its abundance. This includes various agricultural residues such as corn fiber, corn stover, rice straw, wheat straw and sugarcane bagasse, and energy crops such as switchgrass. In this presentation, the current state of R&D for cost-effective conversion of lignocellulosic feedstock to fuel ethanol, and efforts to bring the technology into the market place will be reviewed.

Dr. Badal Saha is a Research Chemist and Lead Scientist with the Fermentation Biotechnology Research Unit, National Center for Agricultural Utilization Research, USDA-ARS, Peoria, IL. He conducts basic and applied research on the conversion of agricultural residues to fuel alcohol and value-added fermentation products. Dr. Saha was previously a research scientist with the Michigan Biotechnology Institute, Lansing, MI (1985-92) and Assistant Visiting Professor at the Department of Biochemistry, Michigan State University, East Lansing, MI. Dr. Saha did his

post-doctoral training in Enzymology at the University of Maryland, College Park, MD after receiving his M. S. (1981) and Ph.D. (1984) in Microbial Technology from Kyushu University, Fukuoka, Japan. He received his B.Sc. (Honors) and M.Sc. in Biochemistry from Dhaka University, Dhaka, Bangladesh. Dr. Saha also holds a post-graduate diploma in Microbiology and Biotechnology from Osaka University in Japan. Dr. Saha has over 130 research publications and 120 published abstracts. Dr. Saha has edited four books: *Fuels and Chemicals from Biomass* (1997), *Applied Biocatalysis in Specialty Chemicals and Pharmaceuticals* (2000), *Fermentation Biotechnology* (2003) and *Lignocellulose Biodegradation* (2004). He serves on the Editorial Board of seven journals: *Applied and Environmental Microbiology*, *Applied Microbiology and Biotechnology*, *Bioresource Technology*, *Journal of Biobased Materials & Bioenergy*, *Journal of Food, Agriculture & Environment*, *Journal of Industrial Microbiology & Biotechnology*, and *Process Biochemistry*. He has given 30 invited seminar presentations and organized 20 symposiums at national and international meetings. Dr. Saha has served the Illinois Heartland (former Peoria) Local Section ACS as Chair-Elect (2000), Chair (2001) and Past Chair (2002).

EARLY meal registration deadline: Friday, September 14th. See page 3 for all details.

Georgia ACS Local Section Elections

Election time is approaching. The candidates for Chair-Elect are John Hall and Deborah Sauder; for Councilor, Lihong D'Angelo, David Gottfried, and David Sherrill; for treasurer, Jennifer Powers and Louis Milakofsky. Ballots and biographical data will be mailed out in late August. Completed ballots must be postmarked by October 1, 2007.

Toby Block, Secretary



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AWARDS

Dr. Thomas L. Netzel, Georgia State University, has been selected to receive the 2008 **National ACS Award for Volunteer Service** to be presented in the Spring of 2008. Among other noteworthy accomplishments and service, Tom chaired the 2003 SERMACS meeting in Atlanta. Cut & paste the link below to read the entire article:

<http://pubs.acs.org/cen/news/85/i24/8524news6.html>

And the Georgia Local Section has been selected as a finalist for **7 ChemLuminary Awards**. SEVEN! The awards ceremony will be held at the National ACS meeting in Boston on Tuesday, August 21, 2007. See the poster (prepared by Don Hicks, the historian of the Georgia Section) on page three with pictures from these activities:

Committee on Local Section Activities -- Best Activity or Program in a Local Section Stimulating Membership Involvement

Committee on Local Section Activities -- Outstanding Performance by a Local Section Large Size Category Award

Committee on Public Relations & Communications -- Best New Public Relations Program of a Local Section

Joint Committee on Local Section/Division Interaction -- Local Section/Division Interaction Award

Society Committee on Education -- Outstanding Kids & Chemistry Award

Women Chemists Committee -- Outstanding Outreach to Girls or Young Women

Women Chemists Committee -- Outstanding Single Event Promoting Women

Women Chemists of the Georgia Local ACS Section

Twenty women chemists (and supporters) attended the lively Social Brainstorm gathering on June 12th at the Park Tavern.

Lynn Sullivan of KForce agreed to chair this group. There will be a Fall Social in mid October with details in the next Filter Press.

For any future suggestions or questions, feel free to contact Lynn Sullivan at dsullivan@kforce.com.

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Postmaster: Send address changes to Joe Stoner, 569 Greenwood Ave., Atlanta, GA 30308.

September Meeting: Monday, September 24th 2007 NOTE: early reservation deadline—see below.

Fuels and Chemicals from Biomass

Dr. Badal Saha, USDA-ARS, National Center for Agricultural Utilization Research

Time: 6:30 - 7:00 PM Arrive
 7:00 - 8:00 PM Dinner
 8:00 - 9:00 PM Meeting and Presentation

Location: Georgia Tech, Molecular Science and Engineering Building, RM 3201A.

Dinner: The menu will consist of salad, vegetable lasagna, chicken balsamico, green beans, cheesecake, iced tea, water and coffee.

Directions: A map of Georgia Tech can be found at <http://gtalumni.org/campusmap>. Molecular Science and Engineering is building #167 on the map. Visitor parking is available on the corner of State Street and Ferst Drive. (Cost is \$0.75 per half hour with a \$8 maximum.)

The MS&E building is located on diagonal from visitor parking on the left side of the street. Turn right out of the visitor parking lot. At Atlantic St, turn left. The Molecular Sciences and Engineering Building is located behind the Whitaker building.

Cost: \$20 per person; \$10 for high-school teachers or full-time students with ID.

Payment should be made to the "Georgia Section ACS" and will be collected at the door. If you make a reservation and then don't attend, you will be charged for the meal, as we have to guarantee the number of meals.

RSVP: Terry Say 404-625-2136 or terrysav@aol.com (preferred).

Deadline for reservations or cancellations is 5:00 PM on Friday, September 14, 2007.

Coming in the Oct. Filter Press: ACS debuts Science News Podcasts.

*** GEORGIA SECTION OUTREACH TO THE NATION ***

About **515,000** persons were directly affected by our dramatically increased **OUTREACH PROGRAMS** in 2006. All top Section activities (8 new) involved outreach to K-8 students, high school students and teachers, graduate and undergraduate students, women and minorities, chemists in Georgia and nationwide, and the general public in Georgia and across the nation!

Outreach to Chemists
 About 100 chemists and teachers from 100 ACS meeting attendees with an ongoing interest in the ACS in Georgia. The ACS in Georgia is a vibrant and growing organization that is committed to providing the best possible service to its members and the general public in Georgia and across the nation!

K-8 Student Outreach
 Outreach to K-8 students and teachers in 100 ACS meeting attendees with an ongoing interest in the ACS in Georgia. The ACS in Georgia is a vibrant and growing organization that is committed to providing the best possible service to its members and the general public in Georgia and across the nation!

Outreach to Undergraduates, Minorities, and the Public
 Outreach to K-8 students and teachers in 100 ACS meeting attendees with an ongoing interest in the ACS in Georgia. The ACS in Georgia is a vibrant and growing organization that is committed to providing the best possible service to its members and the general public in Georgia and across the nation!

Who Was Charles Herty?
 Dr. Herty was an innovative chemist who:
 • created the U.S. chemical industry
 • saved a major U.S. industry
 • twice saved U.S. forests
 • created the U.S. chemical industry
 • started the ACS News Service
 • was the first to use the term "chemical industry"

Georgia is Charles Herty Country!
 American Chemical Society
 American Chemical Society
 American Chemical Society

The Peach State Crusader for American Chemist Jobs and Chemical Industry
 (Original Column by Dr. Charles Herty, 1900s)

Celebrating Chemistry
 Celebrating Chemistry
 Celebrating Chemistry
 Celebrating Chemistry

A catalyst in U.S. science
 Chemist leads other leaders
 Chemist leads other leaders
 Chemist leads other leaders

Outreach to High School Teachers and Students
 Outreach to high school teachers and students in 100 ACS meeting attendees with an ongoing interest in the ACS in Georgia. The ACS in Georgia is a vibrant and growing organization that is committed to providing the best possible service to its members and the general public in Georgia and across the nation!

Outreach to Undergraduates
 Outreach to undergraduate students in 100 ACS meeting attendees with an ongoing interest in the ACS in Georgia. The ACS in Georgia is a vibrant and growing organization that is committed to providing the best possible service to its members and the general public in Georgia and across the nation!

Lab Coats & Other Fashion Statements
 Tuesday March 28th
 Lab Coats & Other Fashion Statements
 Lab Coats & Other Fashion Statements

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