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Energy Connection

News and information from the EMS Energy Institute.

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Chunshan Song selected to receive 2007 Herman Pines Award in Catalysis

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The Energy Institute is pleased to announce that Professor Chunshan Song has been selected to receive the prestigious Herman Pines Award in Catalysis in 2007.

The Herman Pines Award, co-sponsored by the Catalysis Club of Chicago (CCC) of the North American Catalysis Society and UOP, LLC, is presented annually by the CCC at its Spring Symposium for outstanding research in the field of catalysis. This year?s symposium is to be held on May 16 in Chicago.

Professor Herman Pines, a pioneer in catalytic hydrocarbon conversion and chemistry of acid catalysis was a founding member of the CCC and a towering figure in history of catalysis. The award in his honor is cosponsored by UOP where Herman began his industrial career in 1930 and amassed 145 US patents over a 23-year period. His work revolutionized the general understanding of organic chemistry, particularly the chemistry of hydrocarbons interacting with strong acids.

The award is an external recognition for Penn State research on novel catalysts and sorbents in hydrocarbon conversion for ultra clean fuels and chemicals, especially for ?innovative

approaches to catalysis and liquid-phase adsorption for desulfurization and fuel reforming of liquid fuels for fuel cells.?

?I am very honored to have been selected to receive this award in the name of Professor Herman Pines for whom I have great respect, and am grateful to those who have nominated and recommended me for this honor,? Dr. Song said.

?This is a recognition for the research accomplishments by a group effort in the Energy Institute involving my former and current coworkers including postdoctoral scholars and graduate students as well as our industrial and academic collaborators, to whom I am thankful. I have been fortunate to be associated with the Energy Institute and EGEE department. I would like to take this opportunity to thank all the faculty and staff members and all of my coworkers and students in EI/EGEE, especially Dr. Harold Schobert and Dr. Alan Scaroni for encouraging and supporting our earlier research in catalytic hydrocarbon conversion which helped building the base for the current research program in clean fuels and catalysis.?

Faculty Spotlight: Semih Eser

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[12]In his days as a Ph.D. student at Penn State, Professor of Energy and Environmental Engineering Semih Eser took to snacking on red fruits he would pluck off of the trees on the east side of University Park campus.

Although rumored to be poisonous, Eser had known about Cornelian cherries from a young age, because he grew up with them in Turkey. Not only did he consider the tart fruits to be great for nibbling, but he also developed them into research, making activated carbons out of the cherry stones for purifying water.

?This is nature?s wonder...If you can open these up, create porosity on the surface that runs all the way across, then these are very nice granules that you can use for cleaning water,? says Eser, who published a paper detailing how carbon can be activated in one step by sending steam through the fruit stone as it is heated.

?I was actually making the feedstock while eating the cherries and keeping these and washing them,? he says, with a laugh.

A research affiliate of the Penn State Energy Institute, Eser has since continued investigating desirable carbons as well as undesirable carbons. Read More [13]

WPPSEF native grasses program kicks off

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The WPPSEF launched an initiative in November 2006 to support the use of herbaceous biomass as a fuel feedstock. The WPPSEF native grass initiative will examine a variety of warm season grasses for use in residential heating market and for commercial/ light-industrial on-site power or heating applications. Explore the photo gallery and watch video clips to see how the grasses are processed into pellets and utilized as a green heat application.

Student researchers recipients of EGEE Student Awards

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Congratulations to the following Energy Institute student researchers who recieved scholarships, fellowships and/or awards from the College of Energy and Geo-Environmental Engineering:

Jennifer Clemons (graduate student)
Elizabeth Fedorowicz (undergraduate student)
Megan Klevze (undergraduate student)
Margaret Monahan (undergraduate student)

Nicole Reed (graduate student)
Ben Wood (undergraduate student)

Fedorowicz places second in the Undergraduate Research Exhibition

Energy Institute student researcher Elizabeth Fedorowicz took second place in the engineering division of the Undergraduate Research Exhibition in April at Penn State University Park campus. Her poster was titled "Biomass gasification as a means of waste disposal and energy production in the beef industry."

Fedorowicz is a senior majoring in Environmental Systems Engineering (EnvSE), which is within the Energy and Geo-Environmental Engineering Department, and is an EGEE Ambassador. She is a member of the Penn State Society of Environmental Systems Engineers (SESE) and has completed internships in the field, including a summer with the Department of Energy in Washington, D.C. where she worked with the politics and management of the Department?s carbon sequestration program. Congratulations go out to Ms. Fedorowicz.

PA Biomass Working Group recieves funds from WPPSEF to sustain and expand activities

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The West Penn Power Sustainable Energy Fund, managed by the Energy Institute since 2001, announced plans to administer $30,000 in funds to the Pennsylvania Biomass Working Group in order to expand and sustain its scope of activities.

The Pennsylvania Biomass Working Group is comprised of businesses, universities, government agencies, foresters, economic development partners and environmental advocacy groups. The goal of the group is to work together to help residents of Pennsylvania and the Northeast learn how renewable fuels can reduce costs and build community self-reliance in an environmentally sound way.

The group held a workshop open to the general public on April 16-17 in St. Mary?s, Pennsylvania. Agenda items included discussions of herbaceous and woody biomass. Advanced Recycling Equipment, Inc. also hosted a tour of their manufacturing facilities.

Journal article published by EI faculty member takes top spot on most-read list

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An article authored by Energy Institute faculty member André Boehman, along with J. Song, M. Alam, and U. Kim, titled ?Examination of the oxidation behavior of biodiesel soot? claimed the top spot of Science Directs Top 25 Hottest Articles [14] from the journal Combustion and Flame for the period of July to September in 2006. View the journal article here. [15]

POEMS to be hosted at the Energy Institute

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This month, the Energy Institute will host POEMS on April 19 at 3:00 p.m. in C213 Coal Utilization Laboratory. EMS faculty, staff, and students are invited to this monthly coffee hour sponsored by the Dean's Office. POEMS ? a Perfect Opportunity to Energize Mind and Spirit ? is a traveling event: each month the Offices of the Dean, Associate Deans, Finance, Student Center, and Development will visit a department orinstitute for an hour or so of communication, interaction, and good cheer.

Faculty member publications in March 2007

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"Hydrodenitrogenation of Quinoline Catalyzed by MCM-41-Supported Nickel Phosphides"

Mohong Lu, Anjie Wang, Xiang Li, Xinping Duan, Yang Teng, Yao Wang, Chunshan Song, and Yongkang Hu
Energy Fuels; 2007; 21(2) pp 554 - 560; (Article) DOI: 10.1021/ef060467g

"High Heat Sink Jet Fuels. 2. Stabilization of a JP-8 with Model Refined Chemical Oil/Light Cycle Oil (RCO/LCO)-Derived Stabilizers"
Maria Sobkowiak, Caroline Burgess Clifford, and Bruce Beaver
Energy Fuels; 2007; 21(2) pp 982 - 986; (Article) DOI: 10.1021/ef060422f

"High Heat Sink Jet Fuels. 3. On the Mechanisms of Action of Model Refined Chemical Oil/Light Cycle Oil (RCO/LCO)-Derived Stabilizers for JP-8"
Bruce Beaver, Maria Sobkowiak, Caroline Burgess Clifford, Yunjing Wei, and Mitch Fedek
Energy Fuels; 2007; 21(2) pp 987 - 991; (Article) DOI: 10.1021/ef0604238

Upcoming Events

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August 14-26: Ag Progress Days will be held at the Russell E. Larson Agricultural Research Center at Rock Springs.

August 19-23: The American Chemical Society will hold its 234th National Meeting and Exposition in Boston, which will include The David J. Clifford Memorial Symposium.

September 4-5: CrossOver 2007, "Bioenergy: From Fields to Wheels" will be held in University Park.

Contracts/Grants

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The Energy Institute received more than $5.2 million in contracts and grants in the first two quarters of the fiscal year.

Aksoy, Parvana; Bugess-Clifford, Caroline; Activation of Poultry Litter, Delaware State University

Aksoy, Parvana; Schobert, Harold; Sulfur Loss (Desulfurization) of Carbon Materials at High Temperature, CII Carbon LLC

Boehman, Andre; Santoro, Robert; Litzinger, Thomas, Perez, Joseph M.; Examination of Diesel Soot Characteristics that Lead to Undesirable Interactions with Lubricants and Lubricant Additives, Infineum USA L.P.

Burgess-Clifford, Caroline; Mitchell, Gary; Gul, Omer; Delayed ?Coking of Commercial Solvents, Alcoa

Falcone-Miller, Sharon; DTE-Chemical Fractionation of Coals, DTE Energy

Flemings, Peter; Geofluids Consortium 2004-2009, Limited, Chevron Energy Technology Co., Exxon Mobil Exploration Co., Amerada Hess, ConocoPhillips, BHP Billiton Petroleum, Devon Energy Corporation, Andarko Petroleum Corporation, Shell International Exploration and Production

Eser, Semih; GC/MS and GCPFPD Fuel Sample Analyses; Caterpillar, Inc.

Elsworth, Derek; **Marone, Chris**; Quantifying the Physical and Chemical Controls on Permeability Evolution in Sheared Fractures, National Science Foundation

Lvov, Serguei; Alternate Thermochemical Cycles for Producing Hydrogen, Argonne National Laboratory

Lvov, Serguei; Kubicki, J.D.; Sofo, Jorge; Nanoscale Complexity at the Oxide/Water Interface, Oak Ridge Laboratory

Morrison, Joel; West Penn Power Sustainable Energy Fund, Inc.

Ryan, Timothy; High-Resolution CT Scanning of Several Fossil Crab and Lobster Specimens, Kent State University

Ryan, Timothy; CT Scanning to Make a Digital Record of a Bone Awl and a Rodent Mandible, Buffalo Museum of Science

Schobert, Harold; Advanced Thermally Stable Coal-Based Jet Fuels, Air Force Office of Scientific Research

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[13] http://www.energy.psu.edu/2007/Faculty-Spotlight-Semih-Eser.html
[14] http://top25.sciencedirect.com/index.php?cat_id=9&subject_area_id=5&journal_id=00102180
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