

Monday, October 5, 2009

8:15 am - 8:30 am

Welcoming Remarks - Dr. Sohail Murad,

Professor and Head of the Department of Chemical Engineering, UIC

8:30 am - 9:20 am

Keynote Address - Energy, Climate Change and Sustainability

Walter W. Kovalick, Jr., Ph.D.,

Acting Deputy Regional Administrator, U.S. EPA - Region 5

MORNING TRACK 9:30 am - 12:00 pm

Session 1 - Illinois Institute of Technology (IIT) Research

Chair: Don Chmielewski, IIT

Presentations include:

- * Smart Grid: A New Paradigm of Power Delivery
- * Profit Control: A New Approach to Control System Design
- * The Emerald Forest: An Integrated Approach to Bioenergy and Sustainable Communities.

Session 2 - U.S. Environmental Protection Agency (EPA) Initiatives in Sustainability

Chair: James Van der Kloot, U.S. EPA

Presentations include:

- * Engineering Opportunities in Sustainable Development
- * Overview of Sustainable Development Challenges
- * Green Stormwater Management Practices
- * Green Streets and Alleys
- * Panel Discussion of Opportunities in Sustainable Development

Session 3 - Solar Cells

Chair: Sidhartha Ghosh, UIC

AFTERNOON TRACK 1:00 pm - 5:00 pm

Session 4 - University of Illinois, Urbana-Champaign (UIUC) Research

Chair: Charles Schroeder, UIUC

Presentations include:

- * Reconstitution of an Enzyme Mixture from the Fiber Degrading Rumen Bacterium, *Prevotella bryantii* B14, which is Capable of Deconstructing Hemicellulose
- * Recombinant Yeast Strains Towards Consolidated Bioprocessing: Surface Display of Functional Mini-cellulosomes for Direct Conversion of Cellulose to Ethanol
- * Engineering an L-arabinose/xylose co-utilizing *S. cerevisiae* for Biofuels Production
- * Microbial Synthesis of Xylitol from Hemicellulose
- * Membrane-less Fuel Cells

Session 5 - Energy and Sustainability

Chair: George Crabtree, Argonne National Laboratory

Perspectives on energy and sustainability from:

- * Sadhu Johnston, City of Chicago
- * George Crabtree, Argonne

- * David Dunand, Northwestern University
- * Cindy Klein-Banai, University of Illinois at Chicago

Session 6 - The Future Electrical Energy System

Chair: Kevin Taylor, Detroit AIChE, IEEE

Sustainable is the environmentally friendly buzzword of the current decade. In the past, electrical power generation is not something commonly associated with "being green." The session covers some of the latest technical developments in control and production of renewable power. The papers presented cover not only the more common renewable power generation options; but the practical implementation of alternate energy technologies that create challenges to the planners of our distribution and transmission electric system.

5:00pm - 6:00pm

Social & Networking Hour

6:00pm - 8:00pm

Chicago Local Section Dinner Program

Automation of Batch and Procedural Control

Marcus Tennant, Principal Systems Architect, Yokogawa Corp. of America

Tuesday, October 6, 2009

8:30 am - 9:20 am

Keynote Address

MORNING TRACK 9:30 am - 12:00 pm

Session 7 - Biomass Energy

Chair: Terry Marker, Gas Technology Institute

Presentations include:

- * General Biomass Gasification Overview
- * Novel Glass Ceramic Catalysts for Tar Decomposition
- * Integrated Hydrolysis and Hydroconversion for Converting Biomass to Gasoline and Diesel
- * Biogas Cleanup and Use

Session 8 - University of Illinois, Chicago (UIC) Research on Catalysis for Energy

Chair: Randall Meyer, UIC

Presentations include:

- * In-situ XAFS Analysis for the Synthesis and Testing of Supported Pt Catalysts for Propane Oxidation
- * Glycosidic Bond Cleavage in Oxidative Hydrolysis of Cellulosic Materials
- * Density Functional Theory Studies of Pd Alloy NO_x Storage Reduction Catalysts
- * Catalysis for the Generation of Biofuels
- * Selective Adsorption of a Manganese Promoter for Optimized Cobalt Fischer-Tropsch Catalysts
- * Energy Efficient Catalysts and Processes for the Petrochemical Industry

Session 9 - Medical Imaging Advances

Chair: Don Chmielewski, IIT

Presentations include:

- * Medical Imaging Research Center at IIT

AFTERNOON TRACK 1:00 pm - 5:00 pm

Session 10 - Alternative Fuels

Chair: Pat Shannon, Middough Consulting

Biologically-derived fuels are assuming increasing importance in the U.S. Administration's attempts to reduce dependence on imported oil. While this is encouraging, some problems do exist. For example, the basic chemistry and biology mechanisms for viable alternative fuels production are not

well understood. There has already been marked pressure on food prices as more agricultural products are diverted to fuels production. And the long-term economic and environmental sustainability of several of the established processes is unclear.

Session 11 - Northwestern University Research on Novel Materials and Processing for Energy and Sustainability

Chair: Justin Notestein, Northwestern University

Presentations include:

- * Novel Green Light Emitting Diodes: Innovating Droop-free Lighting Solutions for Sustainable Earth
- * Synthesis and Characterization of Nb-substituted Titania Thin Films for Energy and Energy Efficiency Applications
- * Metal Organic Framework Materials for H₂ Storage or Energy Efficient Separations
- * Thermoelectric Materials for Efficient Electricity Generation
- * Novel Processing Techniques for Polymer Recycling
- * Novel Battery Materials for Transportation Applications

Session 12 - LED Lighting

Chair: Sidhartha Ghosh, UIC