ASM INTERNATIONAL®
The Materials Information Society
LONG ISLAND CHAPTER

METALLAGRAM

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Welcome to the 2008-2009 Year

First Meeting . . . . . Wednesday, September 17, 2008

Where . . . . . Sitar Restaurant, Huntington, NY

Topic: Biofueling the Future

Speaker: Devinder Mahajan, BNL/SBU

Social hour … 6:00 pm Dinner … 7:00 pm Meeting … 8:00 pm.

Members … $22 Guests … $25 ASM 25 years … $20 Students … $12

(New and recently transferred-in members free!)

Reservations appreciated - call Peter Indrigo (631-730-2606)

ALSO

During the social hour (6-7pm), there will be a product demonstration by Connie Depner of Carl Zeiss MicroImaging Inc. Connie plans to have on hand the Axio Imager M1m Upright microscope and the SteREO Discovery.V20, the world's first stereo microscope with 1:20 zoom.

DIRECTIONS TO THE SITAR RESTAURANT

The restaurant is located at 665 West Jericho Turnpike in Huntington. Take the Long Island Expressway to Intersection 48 (Round Swamp Road). If coming from the west, turn left at end of ramp to go under the expressway; if coming from the east; turn right at the end of the ramp. Proceed north on Round Swamp for about 2.5 miles, until it ends at Route 25 (West Jericho Turnpike). Turn right. The Sitar Restaurant is about 0.7 miles from this turn, on the left. Their telephone number is (631) 271-8600.

Our Speaker

Professor Mahajan holds a joint appointment between Brookhaven National Laboratory and Stony Brook University. Dr. Mahajan's professional goal is to bridge science and technology for the benefit of mankind. To achieve this goal, his research interests focus on *Energy* issues that includes a portfolio of projects on methane hydrates, H_2 production, fuel cells, Fischer-Tropsch, methanol, and mixed alcohol synthesis using soluble (single-site) or slurried (nano heterogeneous or colloidal phase) based catalysts. He has organized symposia and international workshops on issues such as Clean Fuels, Methane Hydrates, and Biomass and serves as a Guest Editor of three special volumes in the journals Topics In Catalysis, Journal of Petroleum Science & Engineering, and Industrial Engineering and Chemistry Research. He is the author of over 80 publications including book chapters, 10 patents, and presented over 120 invited lectures at various universities, companies, and conferences around the globe. He serves on several national and international energy-related committees, consults for several companies and lectures on clean energy topics, nationally and internationally. His recent awards include: a Russian Academy of Natural Sciences (RANS) Crown and Eagle Medal of Honor for service to the field of "Petroleum Engineering" and membership to the RANS-US Section in 2006 and the DOE Mentors' Award in 2007. He is a member of the American Institute of Chemical Engineers, the American Chemical Society and the New York Academy of Sciences.

Professor Mahajan helped set up the Chemical & Molecular Engineering program in the College of Engineering and Applied Science at Stony Brook in 2004. As a Professor at Stony Brook, his priority is to further integrate education and research at both undergraduate and graduate level, foster collaboration within the university with a goal to train students in the next-generation energy technologies.

The Topic

Petroleum is now referred to as "Black Oxygen" and rightfully so. Fossil fuels dominated the world energy scene for the better part of the last century. Though looming for a while, the present run-up in energy prices is no surprise to energy experts—it was just a matter of time. As we struggle to define the new energy landscape in the world, research in alternative energy sources is now progressing. Biomass-based fuels are considered CO_2-net neutral and it is feasible that biomass could quickly become the preferred feedstock for transportation and utility sectors.

Biomass processing can be achieved via two platforms: biochemical and thermochemical. The thermochemical platform involves two separate steps. First, biomass is gasified to yield synthesis gas (primarily a mixture of CO, CO_2 and H_2) - a carbon depolymerization process. In the second step, synthesis gas is further processed into fuels such as oxygenates (methanol, ethanol or mixed alcohols), hydrocarbons, and H_2. These transformations require specific metal catalysts but are under constant improvement to achieve higher process efficiency.

We have developed the Liquid-Phase Low Temperature (LPLT) approach to achieve "Atom Economy", a term that integrates process efficiency and waste minimization in processes based on highly exothermic synthesis gas transformations. The heart of this approach is designing "controlled-site" catalysts (single site and nano) that can deliver high product selectivity and turnover numbers. Coupled with this approach are two process components: low temperature operation in synchronization with thermodynamics and liquid phase operation to achieve isothermal conditions, a crucial environment to avoid hot spots during catalytic cycle and attain high product selectivity. This integrated approach holds the potential of achieving essentially total carbon utility in synthesis gas transformations. Our results on nano-sized metal particle synthesis via the sonication technique will be presented, followed by data that pertain to the LPLT approach to synthesis of hydrocarbons.

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WELCOME TO THE CHAPTER!

Elias Anagnostou, Northrop Grumman Marvin Green Jr., Mickleton Steven Jaycox, Municipal Testing Lab.

Brain Keyes, MesoScribe Technologies Inc. Teresa Konopka, New York Jim Leach, Sulzer Metco

Lawrence Montanez III Olarn Pornpitaksuk, Flushing Tim Seto, Brooklyn

All new members, including those who have transferred in from another Chapter, are invited to dine free at a regular meeting of their choice. Please take us up on this offer - come along to the meeting and introduce yourself. This is an excellent way to meet with other Chapter members and to establish new business and social relationships in the area. Any questions? – direct them to our totally relaxed Officers and Executive Committee.

(l to r) Biays Bowerman (Chair), Rao Tipirneni (EC), Gary Elgort (Secretary), Jim Quinn (Advisory/Past Chair), Eleanor Lerum-Xavier (EC), John Coyle (EC), Peter Indrigo (Treasurer), Ken Trelewicz (Vice Chair), James Waldvogel (EC) (standing). And, behind the camera, Alex Chi (EC).

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CHAPTER MEETING SCHEDULE

Long Island Chapter

Oct. 15, 2008 **Place: TBD**
Speaker: Chris Jensen, CVD Corp.
Topic: Nanomaterials

Nov. 18, 2008 **Place: Stony Brook University**
Subject: Student design projects, etc.

Dec. 10, 2008 **Place: Union Station, Smithtown**
Speaker: George Hart, SBU
Subject: Art and Materials

Jan. ??, 2009 **Place: South Shore, Patchogue**
Joint meeting with ANS
Speaker, subject: TBD

Feb. 18, 2009 **Place: Maine Maid Inn**
Speaker: Ahmed Ibrahim, Farmingdale SC
Subject: Extending Fatigue Life via Coatings

Mar. 18, 2009 **Place: TBD**
Speaker: Gary Elgort, ConEd
Topic: Steam Disasters

Apr. 15, 2009 **Annual General Meeting**
Place: Union Station, Smithtown
Speakers: SBU Senior Students
Topic: Research posters

May ??, 2009 **Wine tasting at Martha Clara vineyard**

2007-2008 CHAPTER OFFICERS

[( ) – term expires]

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