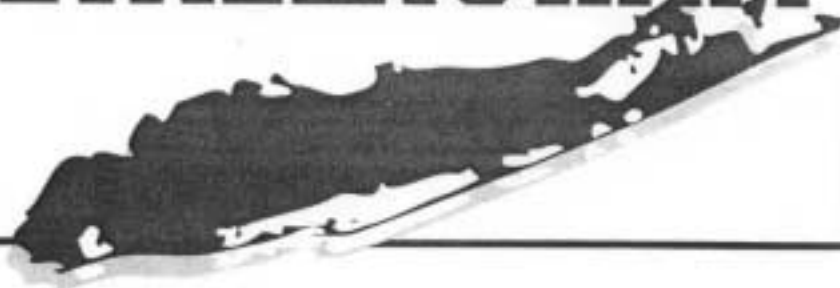




METALLAGRAM

LONG ISLAND CHAPTER



Volume 47 Issue 8

Chapter website: <http://www.matscieng.sunysb.edu/asm/>

DOUBLE MEETING ANNOUNCEMENT

Wednesday, April 19, 2006 - Annual General Meeting

Where: Burke & Shapiro Steakhouse, Smithtown, NY

Featuring: oral and poster presentations by SBU students

Social hour ... 6-7 pm Dinner ... 7:00 pm Tour ... 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 (631-589-6666, ext. 2617)

AND

Sunday, May 7, 2006 – Annual Wine Tasting and Dinner

Reservations required by April 26, 2006 – more details inside

DIRECTIONS TO BURKE & SHAPIRO STEAKHOUSE (via the LIE)

Take the LIE or the Southern State Parkway to the Sagtikos Parkway. Proceed northward on the Sagtikos Parkway, which eventually becomes the Sunken Meadow Parkway. Stay on the Sunken Meadow Parkway to Exit SM3E, Route 25 (Jericho Tpk.) East – Smithtown. Go east on Route 25 (Jericho Tpk.) for about 4 miles. You will pass under a LIRR trestle and a statue of the Smithtown Bull. Keep going on Route 25 (uphill), passing through two traffic signals. JUST BEFORE the second LIRR trestle, turn left on Elliot Place. Almost immediately, make the first right into the restaurant parking lot. The full address of the restaurant is 155 West Main Street and Elliot Place. Their phone number is (631) 265-3300.




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STUDENT PRESENTATIONS

Last fall, a group of Stony Brook University students gave us several presentations, delineating the projects that they were working on and describing the objectives they hoped to accomplish. Now is the time of reckoning. Today the students will return to tell us how their projects went, what problems they encountered and how they were resolved, and, of course, if they were able to achieve their objectives. As at the previous meeting, some of the students will have the privilege (they may call it punishment) of presenting their results orally while others will be displaying them in posters. ALL will be present to answer questions! For the time being, the abstracts gathered here and on the next page will remind you of the subject matter of the various projects and their stated objectives.

Crystal growth furnace for Synchrotron UV-assisted chemical vapor deposition of wide-bandgap semiconductor nanostructures.

Students: Jenee Gatkins, Vyonna Chweya; Technical Advisor: Prof. Carlos Rojo

Abstract: The synthesis of wide-bandgap semiconductor low-dimensional structures is fundamental to the fabrication of enhanced electronic and photonic devices. However, controlling the nucleation and growth of low-dimensional structures (nano-wires and nanoporous particles) remains as one of the major challenges associated with bottom-up nanofabrication strategies. A synthesis reactor for GaN nanostructures has been installed in the U11 beamline at the NSLS at Brookhaven National Lab. The ultimate goal of this project is to determine the effect of UV photons on the selective deposition of wide-bandgap nanostructures.

Design of system to measure electrical properties of sprayed materials.

Student: Evan Rorke; Technical Advisor: Prof. Richard Gambino

Abstract: This project focused on the design of a device that will test the electrical properties of sprayed materials. The device, intended to be used while being connected to a Keithley Multimeter to determine the materials' electrical properties, works by connecting to the metal strips with four contact points, with one set working as a source of current and the other measuring the potential drop along the strip. The commercial application of the device is in the electronics field for both labs and companies who wish to establish the reproducibility of their fabrication processes.

STUDENT PRESENTATIONS (cont.)

Apparatus to wrap individual DNA molecules

Students: Gary Bunch, Peter Gin; Technical Advisor: Prof. Jon Sokolov

Abstract: The biomedical industry has suffered over the course of time due to the inability to extract a length of DNA long enough in order to examine it in detail. The problem exists when just a few of the "code letters" are arranged in a manner unsuitable for healthy DNA, and that this arrangement must sometimes be viewed in a long strand of DNA to detect. Using conventional methods, only undesired lengths are obtainable, the longest presently equal to about 1 mm. The effect of having longer (up to 100 mm) strands of DNA would obviously yield a respectable leap and better data for use in disease control and understanding in the biomedical field. An apparatus capable of extruding a long single strand of DNA has been designed and built.

Development of a remote environmental chemistry laboratory for soil testing and monitoring.

Student: Ingrid Gaborova; Technical Advisor: Prof. Gary Halada

Abstract: A remote sensing system with wireless Ethernet/internet compatibility that would allow for development of a remote environmental chemistry (soil testing and monitoring) laboratory is being developed. This will be linked to a web page for development of remote education lab experiments for middle school through high school (and possibly college) students. The sensing system is in regards to the remediation and understanding of "brownfield" sites, which are sites that have low to moderate levels of industrial byproducts or residue in likely contaminated areas.

Designing experimental tool for Raman Spectroscopy of organic molecules/materials.

Student: Chidiebere Nwankpa; Technical advisor: Prof. Gary Halada

Abstract: The objective in this project was to adapt/modify an already existing spectrochemical prototype cell for use with an existing Raman spectroscopy microscope in the surface analysis and corrosion lab. Part of the objective is to utilize the cell in the examination of different organic molecules like citric acid, which is a minor organic acid with a PH of 1. We plan to use it in examining some large bio macro molecules found from degradation of organic molecules in order to investigate the interaction organic molecules with metals of different sorts and properties.

High Temperature Dynamic Impact Tester

Students: Sal Kutub, Timothy Lee; Technical Advisor: Prof. Andrew Gouldstone

Abstract: Contact mechanics methods (i.e. hardness, indentation) are often used to understand the mechanical properties of thick films on substrates. However, such systems are typically subjected to dynamic loads during service. In addition, a number of industrial characterization tests involve dynamic loading, from commercial systems to hammer strikes. No systematic test exists as yet. The goal in this project was to build a well-controlled impact tester for thermal spray coatings on substrates, with the capability to operate at elevated temperatures.

Apparatus to Laser Ablation Coat the Inner Diameter of Pipes

Students: Mir Anwar, Kelvin Montero ; Technical Advisor: Prof. Henry J. White

Abstract: The cost of petrochemical-based products is governed by the price of the construction materials used in the processing of hydrocarbons. To extend the life of these materials, coatings must be used to bring down the coking problem faced by the industry, the solution lying in coating the materials with a coke-resistant film. Laser ablation is a technique that is used to deposit coatings of a variety of materials on a suitable substrate. On a laboratory scale it could be used to coat the material on small coupons but on an industrial scale, some engineering is involved to devise a mechanism to coat inside cylindrical surfaces.

Sometimes economics dictate what construction materials should be used for a particular application. The use of more corrosion-resistant materials usually increases costs and tends not to be a viable option. A solution to this problem could be to use an inferior material and coat it to resist corrosion and extend life. On a laboratory scale this is usually done on coupons, but on an industrial scale it needs to be extended to coat both the inner and outer diameter of piping.

CHAPTER MEETING SCHEDULE

Long Island Chapter

Closed for the summer – reopening in September 2006

Metro NY-NJ Chapter

(contact Rich Lynch @ 201-891-8399)

Apr. 11, 2006 Place: L’Affaire Restaurant, Mountainside, NJ
Elections, Family Night and Awards Night
Speaker: Barbara J. Altenburgh
Topic: Pipeline Integrity Management – Protecting the Gas Transmission Infrastructure

May 16, 2006 Plant visit
General Magnaplate Corporation, Route 1, Linden, NJ



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- Sulfate

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- Dry Film Lubricants
- Fuel Tank Coating
- Influx
- High Temperature Primers
- Electroless Coating
- Abrasion Resistant Coatings
- Masking

OTHER PROCESSING

- Stress Relieving
- Conductivity Testing
- High Humidity Testing
- Salt Spray Testing
- Hardness Testing

ANNUAL WINE TASTING & DINNER

SUNDAY MAY 7TH 2006

MARTHA CLARA VINEYARDS

1 PM ... meet at the vineyard (6025 Sound Avenue, Riverhead) for registration

1:30 - 3PM free time for other activities

3 PM ... re-gather at Martha Clara for WINE TASTING and DINNER

Cost: \$20-\$25/person - Reservations REQUIRED - call Ken Trelewicz (516-429-2992) before 4-26-2006 or email ktrelewicz@DTB.com

Directions: The vineyard is located at 6025 Sound Avenue, between Northville and Mattituck. To reach it from the Long Island Expressway, the recommended (and simplest) route is to take Exit 71. Make a left and go north on Edwards Avenue for approximately 3 miles, to the second traffic light. Make a right here onto Sound Avenue and head east for about 10 miles. The Martha Clara Tasting Room will be on your right. If you wish to contact them, their phone number is (631) 298-0075.

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The NSLS tour group: (top, 1 to r) Fran Loeb (BNL), Gary Bunch (SBU), Jack Burke (SBU), Rao Tipirneni (LITL), Luis Botto (Gt. Neck Saw), Peter Indrigo (Unitron), Gary Elgort (ConEd), Biays Bowerman (BNL), John Coyle (Unitron), Jose Mawysin (SBU), Wei-Guang Chi (SBU), Jose Colmanares (SBU), Rainbow Wu (SBU), Victor Schaeper-Koetter (Sulzer Metco), Sal Pontillo, Vasu Srinivasan (SBU), Balaji Raghothamachar (SBU), Jean Jordan-Sweet (IBM/BNL); (seated, 1 to r) Jim Quinn (SBU), Pavani Tipirneni (LITL), Kathy Elgort (ret), Cliff Shaver (ret), Ken Trelewicz (DTB), Dick Richards (ret)



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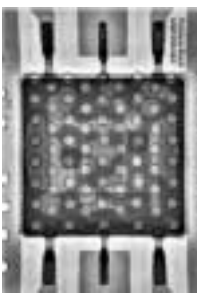
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ASM-LI STUDENT CHAPTER

Jose Mawyin has put together a great website – check it out and see how active the students have been – lots of pictures (including video)

<http://www.ic.sunysb.edu/Clubs/matsci/>

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