



The Northeastern Section
of the **AMERICAN CHEMICAL SOCIETY**

Current Events

14th Annual Sukant Tripathy Symposium

December 5, 2014

By Michael P. Filosa

Sukant Tripathy was a Professor of Chemistry at the University of Massachusetts Lowell (UML) who tragically died in 2000 while swimming in Hawaii. Professor Tripathy was a graduate of the Indian Institute of Technology and received his doctorate from Case Western Reserve University in 1981. He was founder and Director of the Center for Advanced Materials. He also served as Provost and Vice-Chancellor for Academic Affairs from 1994-1996. He was awarded the 1993 Carl S. Marvel Creative Polymer Chemistry Award by the ACS Division of Polymer Chemistry. He published more than 200 papers and held two-dozen patents. He was recognized as a world leader in the broad area of polymers in electronics and optics.ⁱ

After his death his colleagues honored Professor Tripathy in four ways: 1. Creation of the Tripathy Memorial Fellowships, 2. The Konarka Sukant Tripathy Endowed Memorial Lecture, 3. The Sukant Tripathy Memorial Symposium and 4. The Sukant Tripathy Endowed Professorship. The two most recent recipients of the Memorial Fellowships are Joshna Chittigori (2013) and H. Jayawardena (2014). Each award is a \$6500 stipend to conduct research during the summer months. Selection is based on the students' academic accomplishments, research, recommendation letters and an oral presentation to the selection committee.

Among the speakers at the endowed lectureship have been many Nobel Laureates including Alan G. MacDiarmid (2002), Alan J. Heeger (2005), Robert Grubbs (2007), Craig C. Mello (2008), and Wolfgang Ketterle (2013). Other speakers of great distinction have been Robert S. Langer (2003), George Whitesides (2004), Edwin L. Thomas (2006), Sir Richard Friend (2009), Timothy Swager (2010), David A. Tirrell (2011), Fred Wudl (2012) and Krysztof Matyjaszewski.

The Sukant Tripathy Endowed Professorship was announced to mark the tenth anniversary of his passing on December 2, 2010 at a Legacy Dinner Reception. The goal was to raise funds to support an Endowed Professorship in Renewable Energy at the University of Massachusetts Lowell. This professorship will be used to recruit world-renowned faculty members to do cutting edge research on solar and renewable energy systems.



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The Memorial Symposium is usually held the first Friday after Thanksgiving week to coincide with the MRS Conference in Boston. There are normally eight invited speakers from both academia and industry with a focus on current trends in a wide range of materials science. Student researchers and post-doctoral fellows also participate with poster presentations. FLEXcon of Spencer, MA and the University of Massachusetts Lowell sponsored the symposium. Additional sponsors are still sought for this event. The event was kicked-off with greetings and a short introductory speech from UML Vice-Chancellor Julie Chen. She then handed the program off to Professor Jayant Kumar.

The first speaker at the Symposium was Wilfred Ngwa of the UML Department of Physics. He spoke about his work on nanoparticle “drones” which would enhance radiation therapy of cancer patients. Chulsung Bae of Rensselaer Polytechnic Institute followed with a very interesting talk on his functionalization of low-cost hydrocarbon polymers to act as ion-conducting polymers for clean energy conversion. These polymers are possible replacements for Nafion.

After a break, Christos Dimitrakopoulos of the University of Massachusetts Amherst talked about his work on “Wafer-Scale Epitaxial Graphene on SiC: Synthesis, Devices and Transfer. Ravi Mosurkal of the U.S. Army Natick Soldier Research, Development & Engineering Center (NSRDEC) spoke about the development of new “Flame Retardant Materials.” U.S. Army NSRDEC and UML have a joint program called the “Heroes Program” in which improved environmentally benign flame retardant materials are a key goal.

After lunch Douglas Adamson of the University of Connecticut returned to the topic of graphene. His group has techniques for separating graphene and boron nitride sheets and suspending them into water and oil phases. The graphene or BN sheets stabilize the high-energy interfaces between oil and water. Incorporation of monomers such as styrene into the oil phase allowed the formation of graphene and BN containing foams with very interesting and useful properties.

Shiladiya Sengupta of Harvard Medical School then presented the penultimate talk: Understanding Challenges in Cancer Biology Inspires Design of Nanomedicine. He described their recent multi-disciplinary efforts to design, synthesize and evaluate nanoparticles for the imaging and treatment of cancer. The final talk of the symposium was presented by Professor Mordechai Rothschild of the Massachusetts Institute of Technology. He spoke about Plasmonics Technologies for UV, Visible and IR Applications.

Lunch featured 17 posters. Among these posters were three by students of Professor Prakash Rai on treatment of breast cancer. Students of Professor Jayant Kumar and



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Professor Ram Nagarajan presented multiple posters on topics related to solar energy conversion, flame retardant materials and bio-derived polymers and surfactants.

Norris-Richards Summer Scholar Tyler Harrison, a student of Professor Daniel Sandman, presented a poster entitled "Towards New Organic Solid State Reactions." A summary of this work was published in the January Nucleus.

The University of Massachusetts Amherst was represented by students of Professor Paul Lahti. In addition to UML, UM Amherst and U.S. Army NSRDEC there were also participants from Tufts University, FLEXcon, R. F. Kovar & Associates, and Winchester High School.

This was my first Tripathy Symposium. It was an excellent event with a presentation of cutting edge materials science in a number of areas. It was a very good networking event, the food was excellent and the setting comfortable and set up well.

The event certainly has room to grow and is a wonderful tribute to the memory of Professor Tripathy. Much credit goes to Michelle Vercellin, Professor Kumar, Professor Nagarajan and the others who have been striving since 2000 to honor the memory of Professor Tripathy.

i Much of the information in this report is drawn from the program book for the 14th Annual Sukant Tripathy Annual Memorial Symposium held December 5, 2014 at the University of Massachusetts Lowell Inn & Conference Center, 50 Warren Street, Lowell, MA 01852.