



MSE SEMINAR

Materials Science and Engineering
Michigan Technological University

Thursday, October 11, 2012

2:00 pm – 3:00 pm

Room 610, M&M Building

Mechanics of Micro- and Nano-Textured Systems: Nanofibers, Nanochannels, Nanoparticles and Slurries

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Abstract

Nanotechnology coupled with basic understanding of mechanical engineering can do wonder in our everyday technology. In this work it will be shown that how electrospinning and solution blowing can be used as perfect platform for preparing materials of nanoscale order. It will be shown how electrospinning can be used to prepare heat transfer application, nanofluidics. Use of a novel solution blowing method in preparing functional nanomaterial starting from carbon nanotube to green sustainable material will also be discussed. It will also be shown that how nanoencapsulation of phase change materials can be used for manipulation of temperature range of operation for heat removal.

Bio: Suman Sinha Ray received his Bachelors in Mechanical Engineering from Jadavpur University in India in the year of 2007, where he was awarded silver medal for his academic records. He received his PhD in Mechanical Engineering from University of Illinois at Chicago under the guidance of Dr. Alexander L. Yarin in the year of 2011. He has received various prestigious awards namely Dean's Fellowship, Provost Award, Chicago Consular Corps Scholarship. He is currently working as Post Doc with Dr. Alexander L. Yarin in University of Illinois at Chicago. He has co-authored 17 peer reviewed journal publications, 1 invited book chapter and 1 patent. His research interest and current research includes experimental and theoretical thermal-fluid sciences at the micro/nanoscale, characteristics and new methodologies of manufacturing nonwoven micro/nanofiber mat, tailored nanoparticles, bio-materials, high-resolution material characterization techniques, solar cells, super capacitors, renewable energy, functionalized polymer nanocomposite, self healing materials, rheological characterization of complex fluids, water purification and filtration.

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