

ASME Journal of Nanotechnology in Engineering and Medicine
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Call for Papers

Special Issue on: Design and Fabrication of Microscale and Nanoscale Devices for Applications in Energy, Environment, and Medicine

Microdevices and nanodevices have emerged as routine tools in a variety of exciting applications in energy, environment, and medicine fields. Examples include biosensors, imaging systems, energy converters and harvesters, fuel cells, pharmaceutical test arrays, diagnostic tools, separations, drug delivery systems, and point-of-use test kits. This special issue aims to assemble reviews, opinion articles and research reports of the latest advances in design tools, materials, structures, fabrication methods, life cycle analysis, metrology and predictive modeling for microdevices and nanodevices, with the emphasis on applications in energy, environment, and medicine. Potential topics include, but are not limited to, the following:

- Fluid manipulation and control methods (micro- or nanopumps, valves, etc.)
- Micro- and nanotechnology-assisted drug discovery and delivery (microneedles, transdermal delivery devices, micropumps for insulin delivery, printing for personalized medicines, microfluidic protein crystallization arrays, etc.)
- Self-assembly of nanostructures (force sensors, nanomotors, shear sensors, DNA origami, bio-templates for nanostructure fabrication, etc.)
- Energy harvesting and generation (micro-fuel cells, piezo-harvesters, etc.)
- Sensors (environmental gas sensors, water sensors, etc.)

Lead Editor for Special Issue: Prof. Shaurya Prakash, Department of Mechanical and Aerospace Engineering, The Ohio State University, prakash.31@osu.edu

Co-Editor for Special Issue and JNEM Associate Editor: Prof. Debjyoti Banerjee, Department of Mechanical Engineering, Texas A&M University, dbanerjee@tamu.edu

Co-Editor for Special Issue: Prof. Sudipta Seal, Department of Mechanical, Materials, and Aerospace Engineering, University of Central Florida, Sudipta.Seal@ucf.edu

All manuscript submissions to this special issue will be subject to ASME's peer review process to ensure the highest standards of quality. Please indicate in your cover letter that the submitted manuscript has not been published previously, is not under review by any other journal, and will not be submitted elsewhere before a final decision is made by JNEM. Please notify the Lead Editor by email of your intent to submit research article/communication/review paper by December 15, 2012. Please begin the subject line of the email with "JNEM".

Manuscript submission:

1. Manuscripts must be prepared according to the Journal's guidelines, available at <http://journaltool.asme.org/>
2. When submitting the manuscript, select the special issue for your paper
3. Submit your manuscript in PDF format online at the ASME Journal Tool website: <http://journaltool.asme.org>

Important Dates:

Manuscript Due	February 15, 2013
Reviewer reports and author notification	April 15, 2013
Publication date	November 15, 2013

Editor Biographies:

Shaurya Prakash graduated with a Ph.D. in Mechanical Engineering from the University of Illinois at Urbana-Champaign in 2007 and has been on the faculty at The Ohio State University since 2009 in the Department of Mechanical and Aerospace Engineering. He obtained his bachelor's in Mechanical Engineering from the University of Arkansas, Fayetteville in 2001 and his MS also in Mechanical Engineering from the University of Illinois at Urbana-Champaign in 2003. He is the director of the Microsystems and Nanosystems Laboratory at OSU, and has published over 60 peer reviewed articles and papers. He is a leading organizer of nanofluidics technical topics at ASME meetings including IMECE and ICNMM. He is also a member of the ASME Energy-Water Nexus Interdisciplinary Council and one of his current research interests lies in evaluating nanotechnology-based solutions for the energy-water nexus. His research focuses on developing microsystems and nanosystems for applications in water purification, renewable and alternate energy, and chemical and biological separations. His group addresses fundamental scientific questions and strives to develop new technologies for problems important to modern societal needs. The research work is multi-disciplinary in nature and often requires bridging several fields including mechanical engineering, surface chemistry, and materials science. More information can be found at: <http://www.mecheng.osu.edu/lab/mins>

Debjyoti Banerjee received his Ph.D. in 1999 from the University of California, Los Angeles (UCLA) and B.S (Mechanical Engineering) from Indian Institute of Technology (I.I.T.), Kharagpur in 1992. He has 3 M.S. degrees. He received 6 patents (16 patent applications/provisional patents) from his prior work as a Manager in the Advanced Research & Technology (ART) Division at Applied Biosystems (Life Technologies), NanoInk Inc., CIPHERGEN Biosystems Inc., Coventor Inc. and Tata Corp. (India). He joined the Mechanical Engineering Department at TAMU as an Assistant Professor in 2005 and received tenure with promotion to Associate Professor in 2011. His research activities are in the realm of thermal-fluids sciences with emphasis on renewable energy (solar thermal energy storage using nanofluids), multiphase flows (boiling, condensation on nanostructures), MEMS, bio-microfluidics/ nanofluidics (meta-materials, pathogen detection, vaccine storage, nanosynthesis of lipid bilayers, proteomics/genomics assays) as well as applications of nanotechnology, nanosynthesis and nanomanufacturing (e.g., Dip-Pen Nanolithography/ "DPN", temperature nano-sensors, Carbon Nanotube synthesis at low temperatures with chirality control using DPN and explosives sensing using nano-calorimetry). Dr. Banerjee received TEES Select Young Faculty award in 2009, and was selected as ASEE Summer Faculty Fellow at AFRL/AFOSR (2006, 2007) and SPAWAR/ONR (2009). At the graduation convocation at IIT he received the "Best Mechanical Engineering Student Award (Endowment)". Dr. Banerjee received the "2001 Best Journal Paper Award" from the ASME Heat Transfer Division (HTD). He received the "3M Non-Tenured Faculty" award (2009-2012). He is a Faculty Fellow at the Mary Kay O'Connor Process Safety Center at the Texas A&M University (2005 -). Since 2005, Dr. Banerjee has graduated (chaired

the thesis committee) of 9 PhD students and 14 M.S. students (including as a co-chair for 1 PhD student and 3 M.S. students). Research Website: <http://db.tamu.edu>).

Sudipta Seal (University Distinguished Professor and UCF Pegasus Professor (UCF's highest faculty honor) joined the Advanced Materials Processing and Analysis Center (AMPAC) and Mechanical, Materials and Aerospace Engineering (MMAE) at the University of Central Florida in Fall, 1997 after a brief postdoctoral fellowship from Lawrence Berkeley National Laboratory and UC Berkeley in synchrotron radiation materials science. He has served as Nano Initiative Coordinator for the Vice-President of Research & Commercialization. He is currently the Director of Nanoscience Technology Center and Advanced Materials Processing Analysis Center at UCF and Professor of Materials Science and Engineering and UCF College of Medicine. He is the recipient of the 2002: Office of Naval Research Young Investigator Award (ONR-YIP), He's also been selected for the Japan Society of Promotion of Science Awardee and the Alexander Von Humboldt Fellow, ASM IIM Lecturer award, Royal Soc of Eng - Visiting Professor Distinguished Fellowship at Imperial College of Science, Technology and Medicine. He was elected to attend the prestigious Frontiers of Eng Symposium sponsored by National Academy of Engineering. He is the recipient of Fellow of American Society of Materials (FASM) and Fellow of the American Association of Advancement of Science and recently elected Fellow of American Vacuum Society. He has won multiple TIP (Teaching Incentive Program) and RIA (Research Incentive) awards from UCF. He has more than 260 journal papers, 67 conference proceedings paper (refereed), 11 book chapters, 11 Edited conference proceedings volume and 3 books on nanotechnology (including one on Nanoscience and Technology Education), 31 issued patents (and many pending), technology formed companies (nSolGel, NanoCe and NTiOx) and h index > 35. He is recently awarded the UCF Dean's Advisory Board: Faculty Award for Excellence from UCF College of Engineering and won the UCF Doctoral Student Mentoring Award. He has graduated 12 MS, 15 PhD and advised 11 postdoctoral fellow and researchers. His expertise lies in the field of bulk nanomanufacturing, sensors, nano therapeutics, nano energetics, green manufacturing and composites and surface engineering. <http://sudipta-seal.ucf.edu/>