

Seminar Series

Biologically Inspired Micro and Nano Engineering – Present and the Future

by

Dr Tak Sing Wong, Ph.D.

*NSF Center for Scalable and Integrated Nanomanufacturing
Mechanical and Aerospace Engineering Department
University of California, Los Angeles*

Date: Feb. 24, 2010 (Wednesday)
Time: 4:30pm - 5:30pm (Tea Reception at 4:00pm)
Venue: Room Y4701, 4/F, Academic Building (Near Lift 4)

Abstract

Nature has long been a source of inspiration in many different fields of science and engineering, particularly in the design of extremely complex, and functional systems across a multitude of length scales. Learning from these natural designs offers unlimited opportunities in creating novel engineering devices and systems. The successful implementation of biologically inspired concepts into engineering design innovation is highly reliant on the scientific understanding behind the natural design, as well as the advanced manufacturing technologies that allow us to emulate these natural structures. In this presentation, I will discuss the science and engineering of the recent advanced micro- and nanomanufacturing technologies, which would enable us to mimic the intricate natural mechanical functions, from water repellency of natural surfaces to cell motility. In addition, I will discuss the future research opportunities of bio-inspired engineering for materials and energy applications.

Biography

Dr. Tak Sing Wong is currently a postdoctoral research scholar at the University of California at Los Angeles (UCLA), where he is affiliated with the US National Science Foundation Center for Scalable and Integrated Nanomanufacturing. He received his Ph.D. degree (2009) in MEMS/Nanotechnology in the Mechanical and Aerospace Engineering Department at UCLA, and his B.Eng. Degree (2003) specialized in mechanics and manufacturing technologies from The Chinese University of Hong Kong. He has authored/co-authored 22 papers in leading archival journals and peer-reviewed conference proceedings, a book chapter in the *Encyclopedia of Nanoscience and Nanotechnology*, and has a pending U.S. patent, all in the areas of MEMS and nanotechnology. Dr. Wong is the recipient of the Lucent Global Science Scholar Award and the Intel Foundation Ph.D. Fellowship. His research work on nanomanufacturing technologies has garnered a number of regional and international best student paper awards from the Institute of Electrical and Electronics Engineers (*IEEE*). He is a member of *IEEE*, American Chemical Society, and an elected full member of Sigma Xi – The Scientific Research Society. His current research focuses on the fundamental and applied aspects of micro- and nanomanufacturing, as well as biologically inspired engineering technologies for materials science, biomedical, and energy applications.

Enquiry: 2788 8420

All are welcome!

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