



Northeastern University

College of Engineering

Please join us for a
Special Chemical Engineering Seminar

Wednesday, October 30, 2013
108 Snell Engineering
11:45 a.m. – 1:00 p.m.

“Nano Medicine That Change Phases”

MING SU, Ph.D.

Department of Biomedical Engineering
Worcester Polytechnic Institute

ABSTRACT

With their unique physical and chemical properties, nanomedicines are considered as promising candidates for future diagnostics, imaging and therapeutics. It is believed that nanomedicines with novel properties could bring unprecedented capability to healthcare. Instead of relying on traditional nanomedicines with well-known properties (i.e., optical, electrical, magnetic and chemical ones), I had developed a new type of nanomedicines based on the thermal property of nanoparticles, i.e., phase change nanoparticles (nano-PCMs). The nano-PCMs of metallic and organic materials can undergo reversible transitions between solid and liquid phases, absorb or release heat during heating or cooling process, have sharp melting peaks, and composition-dependent melting temperatures. In this talk, I will discuss our on-going efforts of using nano-PCMs to detect multiple biomarkers, enhance heat transfer for brain hot spot cooling, and find out fake drugs. It is anticipated that the uses of nano-PCMs in diagnostics, therapeutics and drug anti-counterfeiting will bring new and exciting capacities in the management of a wide variety of diseases such as cancer, traumatic brain injury, stroke, and obesity, among others.

BIOGRAPHY: Dr. Ming Su obtained his PhD degree from Materials Science and Engineering Department at Northwestern University. He has been a Eugene P. Wigner fellow in Bioscience Division at Oak Ridge National Laboratory before joining University of Central Florida (UCF) in 2006. He joined Worcester Polytechnic Institute as an associate professor in 2013. His research interests cover nanomedicines, biological sensing, and health care materials. He has received many awards such as DOD Concept award, NSF Career award, NIH Director’s New Innovator award, DOJ New Investigator award, ACS-PRF Doctoral New Investigator award, and 2013 JALA-10 Breakthroughs in Innovation award.

Refreshments will be served.