



# Northeastern University

## College of Engineering

Please join us for a  
**Special Chemical Engineering Seminar**

**Friday, February 21, 2014**  
**320 Shillman Hall**  
**11:45 a.m. – 1:00 p.m.**

***“Life is Better with Drops!”***

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### **ABSTRACT**



Microfluidic technologies offer an unprecedented level of control over the flows of multiple fluids at micrometer scales; this enables the high-throughput production of many monodisperse, picoliter-volume emulsion drops. These drops provide a means of encapsulating an active material within a precisely-controlled environment. In the first part of my talk, I will focus on using emulsion drops generated in microfluidics as templates to fabricate functional microcapsules and microparticles that respond to a range of environmental stimuli in prescribed ways. In the second part, I will demonstrate how we can utilize drops as vessels for biological reactions. Since large numbers of these drops, can be produced and screened quickly, this approach overcomes the limitations of current screening technologies. I will show how we exploit these advantages in order to use microfluidics for developing new peptide-based drugs and for the early diagnosis of cancer.

**BIOGRAPHY:** Dr. Abbaspourrad received his M.Sc. in Chemistry from Ferdowsi University in Iran. He did his graduate work on vapor phase synthesis of organic compounds using zeolites at the Isfahan University of Technology in Iran, receiving a Ph.D in Chemistry in 2006. Dr. Abbaspourrad then served as R&D manager in a German-based company named Mutip-Dupli until 2008. His first post-doctoral training was on fabrication of gas nano-sensors at the University of Campinas in Brazil in 2008. At the end of 2009, he joined Prof. David Weitz’s group at Harvard University where, studying fabrication of smart materials and biological assays using drop-based microfluidics.

**Refreshments will be served.**