

# **BENG800 SEMINAR #6: “BIOANALYTICAL MICROFLUIDICS: A TRANSITION FROM PHOTOLITHOGRAPHY TO DESKTOP PRINTING”**

## **Speaker**

Dr. Mohtashim H. Shamsi

## **Location**

Research Hall 163

## **Date**

12:00pm-1:00pm (lunch will be provided)

Thursday, November 17, 2016



**Biography:** Dr. Mohtashim H. Shamsi is currently an Assistant Professor in the Department of Chemistry and Biochemistry, Southern Illinois University Carbondale. Dr. Shamsi's research focus encompasses the interfaces between electroanalysis, sensing/biosensing and microfluidics. He received his B.S. in Inorganic Chemistry from the University of Karachi, his M.S. in Materials Science from the Gwanju Institute of Science and Technology, and his PhD in Analytical Chemistry from the University of Toronto. Following that, he did his post doctoral fellowship in Analytical/Bioanalytical Chemistry University of Toronto.

## **Abstract:**

### **Bioanalytical Microfluidics: A Transition from Photolithography to Desktop Printing**

Bioanalytical science is essential to address current healthcare challenges by developing new methods to detect disease biomarkers. Microfluidics is a manifestation of Lab-on-a-Chip concept that can handle biological samples at ultra-low volume level in a cost-effective manner. Until now, there has been a very limited success in the field of Bioanalytical Microfluidics because of expensive photolithographic procedures involved in fabrication of microfluidic platforms. However, there is a hope that current printing technologies (inkjet printing, wax printing, screen printing etc.) can take over and perform most or whole fabrication on your desktop.

I will present my transition from photolithography to desktop printing to prepare miniaturized platforms for bioanalytical applications, such as detection of miRNA, hormones, drugs, neurotransmitter as well as growing stem cells for fate decision study.