In this seminar, an introduction to digital microfluidics will be presented. A new concept of controlling fluids with electrowetting (EW) and digital microfluidic circuits developed with EW will be presented. The applications of the technique in bio-chips will be discussed. The fundamental fluidic operations using surface tension will be presented. Successful application of the digital microfluidic device to the biology field will be demonstrated.

Speaker: Dr. Hyejin Moon is Assistant Professor of Mechanical and Aerospace Engineering Department at University of Texas at Arlington. She received her Ph.D. from Mechanical Engineering at University of California, Los Angeles (UCLA) in 2005, followed by Postdoctoral research experience at School of Dentistry and School of Engineering at UCLA for 1.5 years. Before she joined UCLA, she received B.S with Cum Laude and M.S. degree from Chemical Engineering at Sogang University, Seoul, Korea in 1995 and 1997, respectively, and worked as process control engineer for Honeywell-Korea, Co. Ltd. For 3 years. Her research interest includes microfluidics, micro total analysis systems (µTAS), bioMEMS/NEMS, diagnostic technology for high impact diseases, and nanotechnology.