Seminar with BME Faculty Candidate

Friday, March 11th, 2016
ITE 125 at Storrs
11:00-12:00 pm

“Implantable Neural Interfaces for Treatment of Neurological Disorders and Neuroscience”

Presented by: Dr. Martin Han, Huntington Medical Research Institutes (HMRI) Neural Engineering Program

Abstract: Advanced microelectrode technologies are well-positioned to drive the next generation neuromodulation and neuroprosthesis for treatment of neurological diseases such as profound hearing loss, spinal cord injury, brain-machine interfaces, and Parkinson’s disease. Dr. Han will discuss implantable, silicon-based 3D microelectrode arrays in various stages of development, from proof-of-concept to translation toward clinical approval. Wafer-level micromachining and specialized assembly technologies for various anatomical targets will be introduced. He will also demonstrate novel device platforms and immunohistochemical techniques to better understand the interface of the brain and microelectrodes in-vivo, and to investigate the limitations of today’s microelectrodes in long-term neural recording.

Bio: Dr. Han is a biomedical engineer and principal investigator at the Huntington Medical Research Institutes (HMRI) in the Neural Engineering Program, located in Pasadena, CA. He obtained his Ph.D. degree in biomedical engineering at the University of Southern California (USC) in 2003, and M.S. and B.S. degrees in electrical engineering from USC and the University of Hawaii at Manoa in Honolulu, HI, in 2000 and 1996, respectively. Dr. Han’s Ph.D. thesis was on the development of planar microelectrode arrays for the recording and stimulation in hippocampal tissue slices. While at HMRI, Dr. Han’s research focused on implantable microelectrode devices. He is a member of multiple professional societies, and has been awarded several NIH and DARPA grants.