NEURAL ENGINEERING SEMINAR SERIES

Multimaterial Multifunctional Fiber-based Neural Interfaces

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ABSTRACT:

Multimaterial fiber drawing has emerged as a versatile platform for creating flexible, biocompatible, and multifunctional fiber devices for biomedical applications. In this talk, I will present some of our recent developments on fiber-based neural interface devices. In particular, we have developed a three dimensional and multifunctional deep brain interface using fibers. These fibers allow for large volume deep brain stimulation and recording in freely behaving mice. We further demonstrate the application of these fibers in revealing the importance of cannabinoid signaling in hippocampal CA1 oscillations in behaving mice.

BIOGRAPHY:

Xiaoting Jia is an associate professor in the Bradley Department of Electrical & Computer Engineering at Virginia Tech. Her research focuses on multimaterial fibers for implantable and wearable applications. Before joining Virginia Tech, she was a postdoctoral associate in the Research Laboratory of Electronics at MIT. She received her Ph.D. in Materials Science and Engineering from MIT (2011), M.S. in Materials Science and Engineering from Stony Brook University (2006), and B.S. in Materials Science from Fudan University in China (2004). She is a recipient of NSF CAREER award, 3M Non-Tenured Faculty Award, ICTAS Junior Faculty Award at Virginia Tech, and the Translational Fellow at MIT.