

# 学术报告会

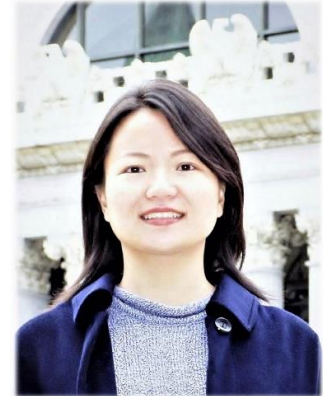
时间：2018年1月4日(周四) 10:00-11:30

地点：电院群楼2-406会议室

## Invited Seminar: Advances and Challenges in Biomedical Devices – Case Studies

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### Abstract:

Biomedical devices are revolutionizing the medicine and health care industries, wherein the fundamental electrical engineering principle play an important role in advancing this process and overcoming emerging challenges. In this talk, I will share two of our research projects that demonstrate the benefits of applying control algorithms and engineering design concepts in biomedical applications. The first project shows how adaptive control algorithms can be used for thermal management of the next generation high-performance implantable medical devices (IMDs) to enable smart IMDs that dynamically adjust their complex operation to meet the application needs while avoiding thermal damage to the surrounding tissue. The second project demonstrates how a noise suppression scheme can be used to improve the detection capability of a sensing system based on microwave Doppler radar for remotely measuring vital signs, such as heartbeat and respiration. With the noise suppression scheme, the heartbeat detection distance is more than doubled comparing with a system without the proposed scheme.

### Biography:

Dr. Ying Zhang is an Associate Professor in the School of Electrical and Computer Engineering at the Georgia Institute of Technology, where she is also the founder and director of the Sensors and Intelligent Systems Laboratory. Dr. Zhang's research interests include Sensors and Smart Wireless Sensing Systems; Intelligent Monitoring and Diagnostic Systems; Data Fusion and Information Extraction; Complex Systems Analysis and Optimization; Microelectromechanical Systems (MEMS) and Smart Materials and Structures.

Dr. Zhang received her BS degree from Tongji University in Materials Science and Engineering. She received a MS degree from University of Illinois at Chicago in Materials Engineering and a MS degree from University of Massachusetts Lowell in Electrical Engineering in 2001 and 2002, respectively. She received her PhD degree from University

of California, Berkeley in Systems Engineering in 2006. Dr. Zhang is a Licensed Professional Engineer and is currently an Associate Editor for the IEEE Sensors Journal. She is a recipient of the NSF CAREER Award, TechConnect Defense Innovation Award and National Innovation Award.