

Seminar on

Integrated Radar Sensors for Noncontact Detection of Vital Signs and Vibrations

by

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Abstract

Microwave Doppler radar has been shown capable of detecting human heartbeat and respiration or mechanical vibrations from a distance away. This noncontact detection method has many potential applications in healthcare, veterinary medicine, biology, industrial manufacturing, etc. Through understandings of its detection mechanism and advances in hardware and software, the once bulky Doppler radar systems can be miniaturized while achieving the same or even better performance. In this seminar, I will introduce several integrated radar sensors demonstrated by my research group in University of Florida. These radar sensors, whether integrated in PCB modules, CMOS chips, or System-in-Package (SiP), enable small portable systems that can be conveniently carried around to measure vital signs and vibrations for many different applications. The small integrated radar sensors can also be used in wireless sensor network for pervasive healthcare monitoring.

Biography

Jenshan Lin received the BS degree in Electrophysics from National Chiao Tung University in 1987, and MS and PhD degree in Electrical Engineering from the University of California at Los Angeles (UCLA) in 1991 and 1994. From 1994 to 2003, he worked for the AT&T/Lucent Bell Labs and its spin-off Agere Systems in New Jersey. In July 2003, he joined University of Florida as an Associate Professor and became a Professor in August 2007. His research interests include sensors and biomedical applications of microwave and millimeter-wave technologies, wireless energy transmission, RF system-on-chip integration, and integrated antennas. Dr. Lin has authored or co-authored over 210 technical publications in refereed journals and conference proceedings. He holds 9 patents. He has graduated 15 PhD students since 2006. Dr. Lin is a Fellow of IEEE. He served as an elected IEEE Microwave Theory and Techniques Society (MTT-S) Administrative Committee (AdCom) member from 2006 to 2011, and served as the Chair of Technical Coordinating Committee 2010-2011. He served as an Associate Editor for the IEEE Transactions on Microwave Theory and Techniques 2006-2010. He has been serving on several conference steering committees and technical program committees. He was the General Chair of 2008 IEEE RFIC Symposium and the Technical Program Co-Chair of the same conference in 2006 and 2007. He was the Technical Program Chair of 2009 IEEE Radio and Wireless Symposium. He is the General Co-Chair of 2012 Asia-Pacific Microwave Conference (APMC2012) to be held in Kaohsiung. He received 1994 UCLA Outstanding Ph.D. Award, 1997 ETA KAPPA NU Outstanding Young Electrical Engineer Honorable Mention Award, and 2007 IEEE MTT-S N. Walter Cox Award. He is the co-author/advisor of several best student paper awards in IEEE conferences, an IEEE MTT-S Graduate Fellowship Award, and two MTT-S Undergraduate/Pre-Graduate Scholarship Awards.

Date : 31 Jul., 2012 (Tuesday)
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City University of Hong Kong

*** ALL ARE WELCOME ***

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