

SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
COLLEGE OF DESIGN AND ENGINEERING

Website: <https://cde.nus.edu.sg/ece>

Area: Microelectronic Technologies & Devices

Host: Dr. He Tianyi

TOPIC	:	Artificial Intelligence (AI) Enhanced Smart Sensing Systems for Smart Home Applications
SPEAKER	:	Mr. Zhang Zixuan Graduate Student, ECE Dept, NUS
DATE	:	Thursday, 23 February 2023
TIME	:	9.00AM to 9.30AM
VENUE	:	Join Zoom Meeting: https://nus-sg.zoom.us/j/86176723706?pwd=bnhHR0ZCbH4dINvOFdEcTR1T05hZz09 Meeting ID: 861 7672 3706 Passcode: 726577

ABSTRACT

The constant pursuit of superior human life quality is the driving force behind the ongoing development of intelligent and multifunctional smart home systems. With the rapid developments of artificial intelligence (AI) and the internet of things (IoT), smart home has been able to make great strides forward. However, the further advancement of various sensors applied in smart home is limited by large power consumption. Textile-based triboelectric nanogenerators (TENGs) have emerged as a promising candidate for next-generation wearable electronics and smart home due to their versatility and wide range of potential applications. Here we propose textile-based micro-structure TENGs with good wearability and performance. In addition, we integrated the textile-based micro-structure TENGs with other functional elements to develop smart socks for delivering information on the identity, health status, and activity of the users, and demonstrate an artificial intelligence of toilet offering a more private approach with low cost and easily deployable software. Such multi-functional wearable textile systems push forward the realization of sports monitoring, healthcare, identification, and future smart home applications.

BIOGRAPHY

Mr. Zhang Zixuan is currently working towards his Ph.D. degree in electrical and computer engineering at the National University of Singapore, Singapore. His research interests mainly focus on wearable sensors, energy harvesters and smart sensing systems.

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