



香港城市大學
City University of Hong Kong



IEEE Antennas and
Propagation Society

IEEE APS Young Professionals Seminar

Wireless Power Transfer Technology: Past, Now and the Future

Dr. Wei LIN

Assistant Professor

Department of Electronic and Information Engineering

The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong

Date : 14 November 2022 (Monday)

Time : 4:00 pm – 5:00 pm

Onsite (with limited seats) is for the participants in City University of Hong Kong (CityU)

Online (Zoom) is for the participants outside CityU

Venue : Room 15-202, 15/F, Lau Ming Wai Academic Building, CityU

Registration: <https://events.vtools.ieee.org/event/register/331526>

Abstract

Far field wireless power transfer (WPT) enabled Internet-of-Things (IoT) applications are the emerging technology and the future trend along with the rapid development of 5G IoT ecosystems. WPT-enabled IoT devices enjoy many advantages as battery-free, environmental-friendly, capable of operating in remote places without manual maintenance.

This talk will introduce the history and development of WPT technology at the beginning, and will be followed by a series of advanced antenna technologies for far field WPT-enabled battery-free IoT systems. Several metamaterial-inspired electrically small rectennas with exceptional wireless power capture capacities will be introduced. Based on the developed ultra-compact rectennas, two WPT-enabled light and temperature sensor systems have been successfully built and tested. A video demo of the prototyped system will be presented. Moreover, an ultrathin beam-steerable transmitting antenna with long distance and larger area coverage will be discussed.

Biography



Dr **Wei LIN** received the Ph.D. degree in Electronic Engineering from the City University of Hong Kong, Hong Kong, in 2016. Dr Lin is currently an Assistant Professor with the Hong Kong Polytechnic University, Hong Kong. He was a Visiting Lecturer (Assistant Professor) with the University College London, London, the United Kingdom from July to September 2022. He was a Post-Doctoral Research Associate from October 2016 to September 2018, a Chancellor's Post-Doctoral Research Fellow, from October 2018 to May 2021 and then a Lecturer and ARC DECRA Fellow from May 2021 to Sep 2022 with the Global Big Data Technologies Centre, the University of Technology Sydney, Ultimo, NSW, Australia. He worked as a Research Associate with Nanyang Technological University, Singapore, from August 2012 to August 2013. His research interests include antennas and circuits, wireless power transfer, millimeter-wave and terahertz devices, and their applications.

Dr Lin has received many academic awards, which mainly include the Australia Research Council (ARC) Discovery Early Career Researcher Award (DECRA2021), the 2019 Raj Mittra Travel Grant (RMTG2019) from the IEEE AP-Society, the Best Paper Award (First Prize) at the International Symposium on Antennas and Propagation (ISAP 2018), the Best Young Professional Paper Award (First prize) at the 3rd Australian Microwave Symposium (AMS2018), the Best Poster Paper Award at the 2nd International Conference on

Electromagnetic Materials and Technologies for the Future (EM-MTF2017), a Talent Development Scholarship from the Hong Kong Government, and the Young Scientist Award at the IEEE Region 10 Conference (TENCON2015). He was a recipient of an Outstanding Reviewer Award from the IEEE Antennas and Wireless Propagation Letters (2018 and 2022) and the IEEE Transactions on Antennas and Propagation (2020 and 2022). He is a Senior Member of IEEE and 2022 IEEE Antennas and Propagation Society (AP-S) Young Professional Ambassador.

***** ALL ARE WELCOME *****

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