



THE CHINESE UNIVERSITY OF HONG KONG
Department of Electronic Engineering
IEEE AP-Society Distinguished Talk



**A Comprehensive Studies on Antenna Design for
Wearable Devices, Part 1 (Smart Watches)**

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Date: 24 May 2024 (Friday)

Time: 4:00 p.m.

Place: Rm 222, Ho Sin Hang Engineering Building

Abstract

This Talk will spotlight the antenna design of wearable smartwatches. Initially, we will provide a brief overview of diverse wearable devices and their anticipated commercial advancements. Following this, we will explore how human body tissue influences the performance of smartwatch antennas and introduce various concepts for smartwatch antenna design. The discussion will include insights into the design specifics of the antennas in APPLE Watch Series 1~8/Ultra, showcasing how different design solutions enhance the isolation between antennas and improve radiation efficiency. Finally, a concise summary will be presented, providing insights into future smartwatch antenna designs, addressing unconventional antenna design technologies, and offering detailed explanations of upcoming design patents.

Biography

Prof. Chow-Yen-Desmond SIM was born in Singapore in Feb. 1971. He received a B.S. degree in electrical and electronic engineering from the University of Leicester, Leicester, UK, in 1998, and a Ph.D. degree in the radio system group from the University of Leicester, in 2003. Since 2003/07, he has been with the Feng Chia University, Taiwan, where he is currently a Distinguished Professor since 2017/08. His research interests mainly include small antenna designs and RFID applications, focusing on 5G sub-6GHz/mmWave antenna, RFID antenna, antenna array, and laptop antenna. He has published over 200 SCI journal papers based on the abovementioned research. Prof. Sim is a Fellow of the Institute of Engineering and Technology (FIET), a Senior Member of the IEEE Antennas and Propagation Society (APS), and a Life Member of the IAET. He was an Associate Editor (AE) of the IEEE Access during 2015/08-2022/01, and has served as the AE of IEEE AWPL during 2017/08-2023/08. He is now serving as the AE of IEEE Journal of RFID, IEEE Open Journal of Antenna and Propagation, and International Journal of RF and Microwave Computer-Aided Engineering. He has served as a member of organizing committees of many conferences, such as General Chair/Co-Chair and TPC Chair/Member, etc. He was recently invited to serve as the Workshop/Tutorial/Invited Speaker in many conferences. He has served as the Chapter Chair of the IEEE AP-Society, Taipei Chapter (2016/2017) and the founding Chapter Chair of the IEEE Council of RFID, Taipei Chapter (2017-2020). He received the IEEE APS Outstanding Reviewer Award (IEEE Transaction Antennas and Propagation) for eight consecutive years between 2014 and 2021. He also received the Outstanding Associate Editor Award from the IEEE Antennas Wireless and Propagation Letters in July 2018. Prof. Sim has recently been appointed as the Distinguished Lecturer of the IEEE AP-Society, serving from 2024 to 2026.

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

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