THE CHINESE UNIVERSITY OF HONG KONG
Department of Electronic Engineering
Seminar

Advancing Antenna Technology:

Across Fundamental Principles and Terahertz Frontiers

Prof. Yueping Zhang, FIEEE

Professor

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Date: 24 November, 2026 (Tuesday)
Time: 3:00 pm
Venue: Room 222, 2/F, Ho Sin Hang Engineering Building, CUHK

Abstract

This talk presents my recent work on antenna research, spanning fundamental principles and terahertz frontiers. I will begin by revisiting—and more importantly, enriching—the foundational concepts of differential and single-ended antennas, including special cases beyond Babinet's principle that preserve a frequency-independent impedance product and reveal simple underlying quantitative relations. I will then turn to the evolution of antenna-in-package (AiP) technology, built upon heterogeneous integration, from an academic concept to an industrial mainstream solution. Next, I will highlight recent breakthroughs in antenna-on-chip (AoC) technology, rooted in the invention of microbump antennas for terahertz sensing and communications. After that, I will draw an analogy between the two most critical devices in radio electronics: antennas and transistors. The talk will conclude with three key takeaways.

Biography

Yueping Zhang is retired Professor of Electronic Engineering at Nanyang Technological University, Singapore, and Visiting Chair Professor of the State Key Laboratory of Radio-Frequency Heterogeneous Integration at Shanghai Jiao Tong University, China. Professor Zhang is widely recognised as the pioneer of antenna-in-package (AiP) technology, which has exerted a profound impact on antenna engineering and electronic packaging. His most recent work on microbump antennas is rendering antenna-on-chip (AoC) technology viable at terahertz frequencies.

Professor Zhang served as Associate Editor of the IEEE Transactions on Antennas and Propagation from 2010 to 2016 and has served as Antenna Track Editor of Electromagnetic Science Journal since 2022. He was appointed an IEEE Antennas and Propagation Society (AP-S) Distinguished Lecturer for the 2018–2022 term.

Professor Zhang's technical accomplishments have earned him numerous honours. He received the 2012 IEEE AP-S Sergei A. Schelkunoff Transactions Prize Paper Award, the 2020 IEEE AP-S John Kraus Antenna Award, and the 2022 Exceptional Technical Achievement Award from the IEEE Electronics Packaging Society. In 2023, he was awarded the Best Paper Award from the Journal of Microwaves of the Chinese Institute of Electronics. He received the Royal Copenhagen Ørsted Plaque at EuCAP 2020 — commemorating Ørsted's discovery of electromagnetism in 1820 — and the Distinguished Alumni Award on the 50th anniversary of the Department of Electronic Engineering at The Chinese University of Hong Kong, founded by Nobel Laureate Charles K. Kao. In addition, three joint papers, each with a different PhD student, were shortlisted for the IEEE AP-S R. W. P. King Award in 2003, 2004 and 2026, respectively.

Beyond his technical contributions, Professor Zhang is a noted historian of radio electronics.

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

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