

Title: Design of Compact and Wide-Band Antennas for Modern Communication Systems

Abstract: Recent years have witnessed the growing demand for more wireless connectivity and services. This has posed a big challenge for antenna engineers, which is to design wide-band or multi-band antennas with very small footprint. The paradox of achieving wide-band operation while retaining a compact antenna size appears difficult to resolve. This talk takes a careful look at this contradicting challenge and proposes several strategies to address this paradox. First, we review the fundamental concepts for achieving wide-band operation of an antenna. We then introduce techniques for effectively miniaturizing an antenna's size while maintaining its wide-band operation. After that, we present a number of practical examples to demonstrate the design of compact and yet wide-band antennas.

Speaker:



Zhongxiang Shen received the B. Eng. degree from the University of Electronic Science and Technology of China, Chengdu, China, in 1987, the M. S. degree from Southeast University, Nanjing, China, in 1990, and the PhD degree from the University of Waterloo, Waterloo, Ontario, Canada, in 1997, all in electrical engineering.

From 1990 to 1994, he was with Nanjing University of Aeronautics and Astronautics, China. He was with Com Dev Ltd., Cambridge, Canada, as an Advanced Member of Technical Staff in 1997. He spent six months each in 1998, first with the Gordon McKay Laboratory, Harvard University, Cambridge, MA, and then with the Radiation Laboratory, the University of Michigan, Ann Arbor, MI, as a Postdoctoral Fellow. In Jan. 1999, he joined Nanyang Technological University, Singapore, as an assistant professor, where he is currently a Full Professor in the School of Electrical and Electronic Engineering. Dr. Shen served as Chair of the IEEE MTT/AP Singapore Chapter in 2009. From Jan. 2010 to Aug. 2014, he was the Chair of IEEE AP-S Chapter Activities Committee. From July 2014 to December 2018, he served as the Secretary of IEEE AP-S. He was an elected AdCom member of the IEEE AP-S from Jan. 2017 to Dec. 2019. He is currently serving as an Associate Editor of the *IEEE Transactions on Antennas and Propagation*.

Prof. Shen is an IEEE Fellow. His research interests include the design of small and planar antennas for various wireless communication systems, analysis and design of frequency-selective structures and absorbers, hybrid numerical techniques for modeling RF/microwave components and antennas. He has authored more than 200 journal papers (among them 140 were published in IEEE Journals) and also presented more than 180 conference papers.