State Key Laboratory of Terahertz and Millimeter Waves
香港城市大學 City University of Hong Kong

Seminar On

Transformative Antenna Technologies for 6G and Emerging Wireless Applications

Professor Hang Wong
City University of Hong Kong

Date : **12 December 2025 (Friday)**

Time : **3:45 pm – 4:45 pm**

Venue : **Room 6-213, 6/F, Lau Ming Wai Academic Building, City University of Hong Kong**

Abstract

The rapid evolution of wireless communication technologies is driving unprecedented demand for high-frequency electronic systems. Market analyses predict significant growth in devices operating across microwave, millimeter-wave, and terahertz regimes, with particular emphasis on the newly allocated frequency spectrum between 110 and 450 GHz by the International Telecommunication Union (ITU). This spectrum offers unique opportunities to advance next-generation wireless systems, enabling transformative applications such as sixth-generation (6G) communications, terahertz imaging, millimeter-wave sensing, low-Earth-orbit satellite networks, autonomous vehicular systems, cyber-physical transport infrastructures, ultra-fast wireless intelligence, and sustainable energy networks.

Here we review recent progress in high-frequency antenna and electronic technologies, with a focus on pioneering work conducted at the State Key Laboratory of Terahertz and Millimeter Waves, City University of Hong Kong. Advances in antenna architectures, materials, and integration strategies are highlighted as critical enablers for realizing the performance requirements of emerging 6G systems. Exemplary case studies demonstrate how these innovations are poised to redefine wireless connectivity, bridging fundamental science with practical engineering. Collectively, these developments establish a foundation for the convergence of communication, sensing, and energy technologies, underscoring the transformative role of high-frequency electronics in shaping the future of global information networks.

Biography

Professor Wong Hang is an Associate Vice President (Community Engagement) at City University of Hong Kong (CityUHK), and a Professor in the Department of Electrical Engineering. He serves as the Deputy Director of the State Key Laboratory of Terahertz and Millimeter Waves (Hong Kong), and the Director of the Applied Electromagnetics Laboratory at CityUHK. His cutting-edge research in advanced antenna technologies is paving the way for 5G, 6G, millimeter-wave, and terahertz applications. Professor Wong's work is recognized both locally and globally, evidenced by numerous accolades such as the Best Paper Awards at IEEE CAMA 2025 and the Chinese National Symposium on Radio Propagation 2023, and the President's Award of CityUHK in 2022. He was honored with the Best Paper Awards at Les Journées Nationales Microondes 2017 in France, the Best Innovation Award at iWEM2017 in UK and the Best Associate Editor Award 2016 from IEEE Antennas and Wireless Propagation Letters in USA. He also received the Outstanding Scientist Award in 2016 from the Shenzhen Science and Technology Bureau. Leading a pivotal project supported by the Ministry of Industry and Information Technology of the PRC, Prof. Wong developed groundbreaking antenna elements for TD-LTE and 5G applications. With over 300 publications, co-authorship of two book chapters, and 30 US and China patents, his impact on the field is monumental. He has served twice as the Chair for the IEEE Hong Kong Section of the Antennas and Propagation (AP)/Microwave Theory and Techniques (MTT) Chapter and as the IEEE APS Region-10 Representative. He is an associate editor for IEEE Transactions on Antennas and Propagation and IEEE Antennas and Wireless Propagation Letters. He was the General Co-chair for the Asia Pacific Microwave Conference (APMC) 2020, General Chair of the Cross-Strait Radio Science and Wireless Technology Conference 2021, and the General Chair of 2025 IEEE International Workshop on Electromagnetics (iWEM). He is an IEEE Fellow and the Stanford's Top 2% of the World's Most Cited Scientists, for his contributions to antennas and wireless engineering.

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

Enquiries:
Professor Chi Hou Chan, State Key Laboratory of Terahertz and Millimeter Waves
Email: eechic@cityu.edu.hk