



Advancements and Future Trends In Modern Antenna Systems For Communications and Sensors

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Many aspects of our lives are recently becoming more dependent on wireless technology. This trend is exemplified by the massive investment in current and future endeavours, such as 5G, 6G technologies, internet of things (IOT) which are enabling fundamentally new applications. A common denominator in many of these new applications is the antenna, which forms the “eyes and ears” of many systems. New developments for advancing the state of the art in antenna technology and associated microwave and millimeter wave circuits to meet future challenges will be needed.

This talk will address some current and new emerging directions of research in antenna systems. This will include new fundamental approaches for antenna analysis, the near fields and electromagnetic energy around antenna systems, and possible implications on future antenna systems design, in what is expected to be an increasingly crowded electromagnetic environment. The talk will also briefly address the importance and impact of this research on engineering education. Finally, a brief introduction of the IEEE Antennas and Propagation Society and available opportunities for research and engineering education will be addressed.



Biography of Prof. Yahia M. M. Antar



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Yahia M.M. Antar (S'73–M'76–SM'85–LF'00) was born in Meit Temmama, Egypt. He received his B.Sc. from Alexandria University, Alexandria, Egypt, and M.Sc. and Ph.D. degrees from the University of Manitoba in Canada, in 1977, he was at the Communications Research Centre in Ottawa, and in May 1979, he joined the Division of Electrical Engineering at the National Research Council of Canada. In 1987, he joined the Department of Electrical and Computer Engineering at the Royal Military College of Canada (RMCC), Kingston where he has held the position of Professor since 1990. He has authored or coauthored over 270 journal papers, several books and chapters in books, over 450 refereed conference papers, holds several patents, has chaired several national and international conferences, and has given plenary talks at many conferences. He has supervised and co-supervised over 90 Ph.D. and M.Sc. theses at the RMC and at Queen's University, several of which have received the Governor General of Canada Gold Medal Award, the Outstanding Ph.D. Thesis of the Division of Applied Science, as well as many Best Paper Awards in journals and at major international symposia. He served as the Chair of CNC, URSI (1999–2008), Commission B (1993–1999), and has held a cross appointment at Queen's University in Kingston since 1990.

Dr. Antar is a Life Fellow of the IEEE, a Fellow of the Engineering Institute of Canada (FEIC), a Fellow of the Electromagnetic Academy, and an URSI Fellow. He has served as Associate Editor of many IEEE and IET Journals and as an IEEE-APS Distinguished Lecturer. In May 2002, he was awarded a Tier 1 Canada Research Chair in Electromagnetic Engineering, which has been renewed in 2009 and again in 2016. In 2003, he was awarded the RMCC "Excellence in Research" Prize, and the RMCC Class of 1965 Teaching Excellence Award in 2012. He was elected to the URSI Board as Vice President in August 2008 and in 2014, and to the IEEE AP AdCom in 2009. He was appointed to the Canadian Defense Science Advisory Board (DSAB) in January 2011. In October 2012, he received the Queen's Diamond Jubilee Medal from the Governor General of Canada in recognition for his contribution to Canada. He is the recipient of the 2014 IEEE Canada RA Fessenden Silver Medal, and the 2015 IEEE Canada J. M. Ham outstanding Engineering Education Award. In May 2015, he received the RMC Cowan Prize for Excellence in Research. He is the recipient of the IEEE-AP-S Chen-To-Tai Distinguished Educator Award for 2017.