Seminar on

History of Wireless

by

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Abstract

This seminar presents a brief chronology of the developments of wireless communication and supporting electronics. The name wireless indicates communication without the use of wires. Various mechanisms have been used for such purpose: electrostatic coupling, conduction, magnetic induction and electromagnetic radiation. The first three, while indeed wireless were extremely limited in the distance they were capable of covering. The breakthrough in wireless communication was the successful use of the fourth one which allowed long distance transmission. The term radio was coined as a short name for electromagnetic radiation. Hence it is possible to speak of some wireless systems as not being radio systems. However, because all the other types of wireless mechanisms were abandoned, nowadays the word wireless is synonymous of radio. Also, because the earliest radio communications used Morse's code for transmitting information, it should be distinguished between this early form of radio communication and radio transmission of information in a readily understandable audio (and/or visual) form. Finally, it must be pointed out that when speaking about the history of wireless communication one can focus on three different types of discoveries: those that made it possible, those that made it realistic, and those that provided quality. Because of all these issues, it is not easy to objectively state who the Father of Radio was. Often, the invention of radio is delegated to one or two persons, the names of whom vary from country to country, depending on the country of origin of the authors. The aim of this presentation is to illustrate that simultaneous developments were going on all over the world and that each invention provided a solution to the portion of the puzzle.

Biography

Tapan K. Sarkar received the B.Tech. degree from the Indian Institute of Technology, Kharagpur, in 1969, the M.Sc.E. degree from the University of New Brunswick, Fredericton, NB, Canada, in 1971, and the M.S. and Ph.D. degrees from Syracuse University, Syracuse, NY, in 1975. From 1975 to 1976, he was with the TACO Division of the General Instruments Corporation. He was with the Rochester Institute of Technology, Rochester, NY, from 1976 to 1985. He was a Research Fellow at the Gordon McKay Laboratory, Harvard University, Cambridge, MA, from 1977 to 1978. He is now a Professor in the Department of Electrical and Computer Engineering, Syracuse University. His current research interests deal with numerical solutions of operator equations arising in electromagnetics and signal processing with application to system design. He obtained one of the "best solution" awards in May 1977 at the Rome Air Development Center (RADC) Spectral Estimation Workshop. He received the Best Paper Award of the IEEE Transactions on Electromagnetic Compatibility in 1979 and in the 1997 National Radar Conference. He has authored or coauthored more than 300 journal articles and numerous conference papers and 32 chapters in books and fifteen books, including his most recent ones, Iterative and Self Adaptive Finite-Elements in Electromagnetic Modeling (Boston, MA: Artech House, 1998), Wavelet Applications in Electromagnetics and Signal Processing (Boston, MA: Artech House, 2002), Smart Antennas (IEEE Press and John Wiley & Sons, 2003), History of Wireless (IEEE Press and John Wiley & Sons, 2005), and Physics of Multiantenna Systems and Broadband Adaptive Processing (John Wiley & Sons, 2007), Parallel Solution of Integral Equation-Based EM Problems in the Frequency Domain (IEEE Press and John Wiley & Sons, 2009), Time and Frequency Domain Solutions of EM Problems Using Integral Equations and a Hybrid Methodology (IEEE Press and John Wiley & Sons, 2010), and Higher Order Basis Based Integral equation Solver (HOBBIES) (John Wiley & Sons 2012) .

Dr. Sarkar is a Registered Professional Engineer in the State of New York. He received the College of Engineering Research Award in 1996 and the Chancellor's Citation for Excellence in Research in 1998 at Syracuse University. He was an Associate Editor for feature articles of the IEEE Antennas and Propagation Society Newsletter (1986-1988), Associate Editor for the IEEE Transactions on Electromagnetic Compatibility (1986-1989), Chairman of the Inter-commission Working Group of International URSI on Time Domain Metrology (1990–1996), distinguished lecturer for the Antennas and Propagation Society from (2000-2003,2011-2013), Member of Antennas and Propagation Society ADCOM (2004-2007), on the board of directors of ACES (2000-2006), vice president of the Applied Computational Electromagnetics Society (ACES), a member of the IEEE Electromagnetics Award board (2004-2007), an associate editor for the IEEE Transactions on Antennas and Propagation (2004-2010) and on the editorial board of Digital Signal Processing – A Review Journal (2003-2012). He is on the editorial board of Journal of Electromagnetic Waves and Applications and Microwave and Optical Technology Letters. He is the chair of the International Conference Technical Committee of IEEE Microwave Theory and Techniques Society # 1 on Field Theory and Guided Waves. He is a member of Sigma Xi and International Union of Radio Science Commissions A and B. He is the 2014 President of the IEEE Antennas and Propagation Society. According to Google Scholar, he has a H-index of 55 with 13,485 citations to his work. He is also the president of OHRN Enterprises, Inc., a small business incorporated in New York state (1985) performing various research work for various organizations in system analysis. He received Docteur Honoris Causa from Universite Blaise Pascal, Clermont Ferrand, France in 1998, from Politechnic University of Madrid, Madrid, Spain in 2004, and from Aalto University, Helsinki, Finland in 2012. He received the medal of the friend of the city of Clermont Ferrand, France, in 2000.

Date : 27 March 2015 (Friday)
Time : 11:00 am – 12:00 noon
Venue : Room P4302 , 4/F , Academic 1, City University of Hong Kong (EE Class Seminar)

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

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