

MHRD Scheme on Global Initiative on Academic Network (GIAN)

DIELECTRIC RESONATOR AND APPLICATIONS

(19th DEC ----- 23rd DEC 2016)

Course Outline

Microwave and millimeter wave antennas are vital components for wireless and satellite communications, radars and other sensors, and many other emerging applications. The lectures will start by general discussion of the field of Antenna Engineering and a brief description of current and emerging new research directions. Some research activities at the Royal Military College of Canada and Queen's University that are aligned with recent and emerging research directions in the field will be discussed. This will be followed by presentations along the following main topics; a) Dielectric Resonator Antennas (DRA's): Fundamentals and recent developments ,b) .New developments on the use of surface waves to advantage in designing new types of microwave circuits as well as a new class of one and two dimensional Leaky Wave and surface wave Antennas . c) Some new findings about the fundamentals of antenna near field structures and the impact on antenna design ,d) Antennas for Satellite and Space applications.

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| MODULES | <ul style="list-style-type: none">• Introduction, history and concepts. Fundamental modes and radiation mechanisms and excitation.• New developments on the use of Surface Waves (SW) ,Leaky wave antennas(LWA)• Recent Advances in Antennas and Near field (NF) Theory• Antenna Systems for Satellite and Space Applications |
| TARGET AUDIENCE | Students of all levels (B.Tech/M.Tech/M.Sc/Ph.D) / Faculty members / Researchers from universities and technical institutions. |
| FEES | <ul style="list-style-type: none">• Students (pursuing Ph. D) ----- Rs 1000• Students (pursuing Masters / Bachelors courses) ----- Rs 1000• Faculty members / Researchers ----- Rs 3000• Participants from abroad ----- \$ 300• The above fee includes a working lunch, all instructional materials and computer use for tutorials. The participants will be provided with suitable accommodation on payment basis. |

Dr. Yahia Antar obtained degrees from the University of Alexandria (BSC) and the University of Manitoba (MSc. ,PhD). He worked at CRC and NRC in Ottawa before joining the staff of the Department of Electrical and Computer Engineering at the Royal Military College of Canada in Kingston where he has held the position of professor since 1990.



Dr. Antar is a Fellow of the IEEE (Institute of Electrical and Electronic Engineers) and a Fellow of the Engineering Institute of Canada (FEIC). He serves as an Associate Editor (Features) of the IEEE Antennas and Propagation Magazine, IET, and served as Associate Editor of the IEEE Transactions on Antennas and Propagation, IEEE AWPL. He served on NSERC grants selection and strategic grants and on review panels for the National Science Foundation.

In May 2002, Dr. Antar was awarded a Tier 1 Canada Research Chair in Electromagnetic Engineering which was renewed in 2009. In 2003 he was awarded the Royal Military College of Canada “Excellence in Research” Prize and again in 2015, and in 2012 the Class of 1965 Teaching Excellence Award. He served on the URSI Board as Vice President, and on the IEEE Antennas and Propagation Society Administration Committee. On 31 January 2011, Dr Antar was appointed Member of the Canadian Defence Science Advisory Board (DSAB). In October 2012 he received from the Governor General of Canada, the Queen’s Diamond Jubilee Medal in recognition for his contribution to Canada. He is the recipient of the 2014 IEEE Canada RA Fessenden Silver Medal for ground breaking contributions to electromagnetic engineering and communications, and the 2015 recipient of the IEEE Canada J.M.Ham Outstanding Engineering Educator Award.

**Venue: ECE Dept
NIT Patna**

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