

Futuristic Trends in Phased Array Antenna Technology

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LRDE DRDO, Bengaluru

Event Details :

Date : Saturday 24th August 2024

Time : 6:00 PM – 7:30 PM IST

Online Mode: <https://meet.google.com/thu-mcpt-izc>



Abstract

Phased array antennas (PAAs) have served as a beacon for radars for 4-5 decades. State-of-the-art technology for PAAS is ever evolving in this domain along with the advancements in associated fields like material science, computer science, numerical techniques and algorithms, antenna and antenna arrays, Microwaves and RF, etc. Presently, the application of PAAs is not only restricted to defence and space domain only, however, it has outreach to other communication and wireless domains like 5G/6G wireless telephony, Wireless power transfer, near field non-destructive area, near-field imaging, etc. PAAS are a system of systems involving multiple subsystems like antenna arrays, transceivers, receivers, exciters, power supplies, etc. The present talk focuses upon the brief introduction of PAAS followed by the discussion on futuristic trends which may serve as a guide for researchers, students, academicians, serving this domain.

About the speaker

Ashutosh Kedar holds a Ph.D. in Electronics Science, M.Tech. in Microwave Electronics, and M.Sc. and B.Sc. in Physics from the University of Delhi. He started his career as a lecturer at the University of Delhi and worked on electromagnetic modeling during his Ph.D. In 2003, he joined DRDO's LRDE as a scientist, where he leads R&D in Active Phased Array Antennas for radar applications. Dr. Kedar has designed and developed antenna systems for AESA radars and currently serves as Project Director for the AMTR project. He has authored over 100 research papers, holds a patent on wide-scan phased arrays, and has published books, including *Sparse Phased Array Antennas*. Dr. Kedar has received numerous awards, including DRDO Technology Group Awards and the IETE Hari Ramji Toshniwal Award. He is an editor and reviewer for several leading journals and holds key positions in IEEE and other professional organizations. His research focuses on wide-bandwidth and wide-scanning phased array antennas for radar systems.

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