

El Capítulo Guadalajara de la Sociedad de Teoría y Técnicas de Microondas (MTT-S) del IEEE invitan cordialmente a la conferencia magistral:

## Silicon-based millimeter-wave phased arrays for 5g: fundamentals to future trends by PhD. Bodhisatwa Sadhu

### SYNOPSIS

5G cellular communications use millimeter-wave phased arrays to achieve high data rates and low latency. The majority of the 5G millimeter-wave infrastructure will be partially or completely based on silicon technology. This talk will discuss key aspects of silicon-based millimeter-wave phased-array module design and characterization. It will cover fundamentals of phased arrays, provide an overview of phased array antenna modules using silicon technology, and take a deep dive into an example 5G phased array antenna module. The talk will end with a peek into the future of 5G directional communications.



Bodhisatwa Sadhu received the B.E. degree in Electrical and Electronics Engineering from Birla Institute of Technology and Science – Pilani (BITS-Pilani) in 2007, and the Ph.D. degree in Electrical Engineering from the University of Minnesota, Minneapolis, in 2012.

He is currently a Research Staff Member with the RF/mm-wave

Communication Circuits & Systems Group at IBM T. J. Watson Research Center, Yorktown Heights, NY, USA, and an Adjunct Assistant Professor at Columbia University, NY. At IBM, he has led the design and demonstration of the world's first reported silicon-based 5G phased array IC, a low power 60GHz CMOS transceiver IC for 802.11ad communications, a software-defined phased array radio, and a self-healing 25GHz low noise frequency synthesizer. He has authored and co-authored 15+ journal papers, 30+ conference papers, the book Cognitive Radio Receiver Front-Ends-RF/Analog Circuit Techniques (Springer, 2014), and several book chapters. He holds 20 issued U.S. patents with 20+ pending. Dr. Sadhu

currently serves as an IEEE MTT-S Distinguished Microwave Lecturer, the RFIC Systems Applications sub-committee chair of IEEE RFIC Symposium, TPC member of Wireless Subcommittee at IEEE ISSCC, and has served as a Guest Editor of IEEE JSSC in 2017.

Dr. Sadhu is the recipient of the 2017 ISSCC Lewis Winner Award for Outstanding Paper (best paper award), the 2017 JSSC Best Paper Award, the 2017 Pat Goldberg Memorial Award for the best paper in computer science, electrical engineering, and mathematics published by IBM Research, three IBM A-level Accomplishment awards, nine IBM Patent Plateau Awards, the University of Minnesota Graduate School Fellowship in 2007, 3M Science and Technology Fellowship in 2009, the University of Minnesota Doctoral Dissertation Fellowship in 2011, the BITS Pilani Silver Medal in 2007, the BITS Pilani Merit Scholarship from 2004 to 2007, and stood 2nd in India in the Indian School Certificate (ISC) examination in 2003. He was recognized as an IBM Master Inventor in 2017, and was selected by the National Academy of Engineering for its Frontiers of Engineering Symposium in 2020.



16 de Noviembre de 2022, 19:00 horas. Evento virtual.

