Title:

Silicon Technology Roadmap to address 6G Radio

Abstract:

We are nearing an inflection point of cellular communications as we migrate from 5G and 5G advanced to 6G cellular standard. The focus of 6G will be on both improving three use case scenarios (enhanced broadband, massive machine type communications & ultra-reliable low latency communications) and integrating the requirements for communication and sensing for best user experience.

6G carrier frequencies are expected to cover sub 6GHz, mmwave, including more than 100GHz bands and potentially bands within 8-24GHz. This talk will highlight the hardware challenges for different 6G radios with focus on Silicon technologies and the roadmap of future technologies to address those. The challenges and relative performances of different semiconductor technologies for > 100GHz and latest results on Silicon technology-based phased arrays in D band will also be discussed.

Bio:

Dr. Anirban Bandyopadhyay is the Senior Director and head of Strategic Applications within the Smart Mobile Devices and Wearables business unit of GLOBALFOUNDRIES, USA. His work is currently focused on hardware architecture and technology evaluations for emerging RF/mmwave and analog/mixed signal-based applications. Prior to joining GLOBALFOUNDRIES, he was with IBM Microelectronics and with Intel where he worked on different areas like RF Design Enablement, Silicon Photonics, signal integrity in RF and Mixed signal SOC's. Dr. Bandyopadhyay represents GlobalFoundries in different industry consortia and alliances on wireless connectivity applications and is an IEEE Fellow and a Distinguished Lecturer of IEEE Electron Devices Society.