

Date/ Time: Thursday, June 23rd, 2016
6:30 PM Pizza & networking
7:00 PM Presentation

Location: Skyworks Conference Room
Newbury Park, CA 91320
(See RSVP/Directions Below)



Speaker : prof. Peter Asbeck, PhD, UCSD

Title : CMOS mmWave Power Amplifiers for 5G Application

Abstract:

Emerging 5G wireless systems will vastly expand attainable data rates, reduce latency and dramatically improve user experience. They will also revolutionize requirements for power amplifiers, for both base stations and handsets. A major thrust is to employ mm-wave carrier frequencies together with large antenna arrays. With one power amplifier per antenna element, relatively small output power will be required. Very wide bandwidth (>200MHz), good linearity and good efficiency will be needed. A variety of different technologies are being considered for the transmitters. In this presentation, research efforts to develop power amplifiers at 15, 28, 45 and 73 GHz based on CMOS technology will be described.

Peter Asbeck, PhD, Peter Asbeck is the Skyworks Chair Professor in the ECE Department at UCSD, La Jolla, CA, and a member of the UCSD Center for Wireless Communications, and a member of the Executive Committee of UCSD's Integrated Technologies Laboratory (ITL). His research focuses on high frequency transistors and circuits, particularly power amplifiers for wireless communications.

Currently, the focus of his research is on developing technologies for more efficient microwave power amplifiers in wireless telephone handsets and base stations. The advanced transistors under development in his lab involve III-V materials including gallium arsenide, indium phosphide, and gallium nitride. Asbeck also works on high-speed wireline circuits and fiber-optic devices, and is researching smaller, more efficient wireless antennas to make way for communicators with multiple antennas to maximize access. He has authored or coauthored more than 350 publications, and more than 20 patents issued.

Peter M. Asbeck (M'75–SM'97–F'00) received the B.S. and Ph.D. degrees from the Massachusetts Institute of Technology (MIT), Cambridge, MA, USA, in 1969 and 1975, respectively. He worked at the Sarnoff Research Center, Princeton, NJ, USA, and the Philips Laboratory, Briarcliff Manor, NY, USA, where he was involved in the areas of quantum electronics and GaAlAs/GaAs laser physics, before joining the Rockwell International Science Center (Thousand Oaks, CA) in 1978. As a Newbury Park resident for those 12 years, he carried out pioneering work in the area of heterojunction bipolar transistors, including development of high-speed devices and circuits based on III-V compounds and heterojunctions. He was awarded the Rockwell Engineer of the Year award in 1986, and it was his and Frank Chang's pioneering work in the development of GaAs/AlGaAs HBT that was eventually transferred to production and has evolved to become the Skyworks HBT process. He stayed there until joining UCSD in 1991. He currently leads the UCSD High-Speed Device Group, including work on HBT and HFET devices, Silicon on Sapphire (SOS) technologies, power amplifier architectures and characterization, and opto-electronic interface circuits.

Dr. Asbeck was General Chairman of the 1996 Device Research Conference, has been a Distinguished Lecturer of the IEEE Electron Devices Society and of the IEEE Microwave Theory and Techniques Society (IEEE MTT-S), was awarded the 2003 IEEE David Sarnoff Award for his work on Heterojunction Bipolar Transistors, and was elected to the National Academy of Engineering in 2007.

Skyworks, Intersection of West Hillcrest Drive and Lawrence Drive, Newbury Park, CA 91320
(not the main building, please use link below to green arrow that pinpoints building)

<http://maps.google.com/maps?q=34.187542,-118.930994&num=1&t=h&vpsrc=0&ie=UTF8&z=18&iwloc=A>

Register : <https://meetings.vtools.ieee.org/m/40208>

Buenaventura ComSoc Chapter