



Graduate Seminar (EEL 6936)
Department of Electrical Engineering
http://ee.eng.usf.edu/Grad_Seminar

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Friday, November 13, 2015, 3:30-4:30 p.m.
Engineering Building II (ENB) Room 109

Integration and Packaging Strategies for Millimeter-CMOS Applications

Abstract

Millimeter-wave CMOS circuits are being developed for consumer products operating up to 100 GHz and beyond. Automotive radar centering around 77 GHz and spectrometers for gas analysis from 180 – 300 GHz are two example applications. Silicon foundries have demonstrated promising transceiver circuits manufactured in a standard digital process flow as opposed to a higher cost RF back-end process. In addition to the transceiver design comes the need to provide integration and packaging strategies that remain low in cost and high in performance. Two methods have been pursued to integrate broadband radiators with a CMOS integrated circuit. This presentation will include simulation, fabrication and measurement results of interconnects, passive components and antennas fabricated using 1) FR-4 laminates and 2) wafer-scale techniques using polymer materials.

Biography



Rashaunda Henderson received the B.S.E.E. degree from Tuskegee University, Tuskegee, AL, in 1992, and the M.S. and Ph.D. degrees in electrical engineering from The University of Michigan, Ann Arbor, MI, in 1994 and 1999, respectively. From 1999 to 2007, she worked as an R&D device engineer at Freescale Semiconductor. She joined The University of Texas at Dallas in Fall 2007, where she has been investigating novel passive components and integration techniques for millimeter-wave circuits and systems. She advises a team of students in the design, fabrication and

characterization of high performance transmission lines, circuits and antennas for frequencies operating up to 300 GHz. Dr. Henderson is a senior member of the IEEE.