



IEEE MTT/AP Orlando Chapter Meeting

“THz CMOS Circuits and Systems”

Speaker: **Qun Jane Gu**, University of Florida

when: Thursday, October 28, 2010, 5:00-6:00 PM

where: UCF, Harris Corp. Engineering Center, HCEC 101

ABSTRACT:

Terahertz circuits/systems have drawn increasing attention recent years due to their unique capabilities in imaging, sensing, analyzing and detecting concealed objects and chemicals, as well as ultra high speed wireless communications. Traditional implementations are based on less accessible technologies, such as laser, Gunn diodes, III-V based HBT/HEMT etc., which are expensive, complicated and inconvenient to operate, thus prevent from massive utilization. Advanced CMOS, powered by ever-increasing device speed, would be the solution to materialize massive production goal for its highest integration level and lowest cost. However, the shortcomings in CMOS technologies impose big challenges to achieve such high speed operation, which calls for creative design ideas. This talk will exemplify a few design ideas in sub-mm wave/THz circuits to push the devices working beyond their limitations. It will cover 80GHz wide band synthesizer, 140GHz transceiver, 200GHz wide locking range frequency divider as well as THz signal generator. Those design techniques would not only pave the way for low cost integrated THz systems to realize wide employment in numerous areas: medical diagnosis, military, biology, etc., but also could enable new applications to benefit human's life.

BIOGRAPHY:



Dr. Qun Jane Gu received the B.S. and M.S. from Huazhong University of Science and Technology, Wuhan, China, in 1997 and 2000, the M.S. from the University of Iowa, Iowa City, in 2002 and the Ph.D. from University of California, Los Angeles in 2007 all in electrical engineering. She received UCLA fellowship in 2003 and Dissertation Year Fellowship in 2007. After graduation, she worked as senior design engineer in Wionics Realtek research group and staff design engineer in AMCC on CMOS mm-wave and optic I/O circuits. Most recently, she was a postdoctoral researcher in UCLA. Since August 2010, she has joined University of Florida as assistant professor. Her research interest spans high efficiency, low power interconnect, mm-wave and sub-mm-wave integrated circuits and SoC design techniques, as well as integrated THz imaging systems.

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