**“Microwave and Millimeter Wave Power Amplifiers: Technology, Applications, Benchmarks, and Future Trends”**

## IEEE MTT/AP Orlando Chapter & Raj Mittra Distinguished Lecture Program

## **DATE/TIME: Wednesday, March 16th, 2016 (5:00 PM-6:00 PM)**

**SPEAKER:** Dr. James J. Komiak

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**ABSTRACT:**

Solid State Transistor Device Technology is ubiquitous in communications, radar, electronic warfare, and instrumentation applications. This presentation will cover Si BJT, Si LDMOS, MESFET, HBT, PHEMT, InP HEMT, MHEMT, and GaN HEMT. Content includes principles of operation, structures, characteristics, classes of operation, and device state of the art benchmarks. The art of power amplifier design is approached from a historical perspective. Power amplifiers utilizing these device technologies covering UHF through sub-millimeter wave are described including amplifier state of the art benchmarks. Future trends are highlighted and summarized.

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**ABOUT THE AUTHOR** James J. Komiak (M’89-SM’90-F'05) received a Ph.D. in Electrical Engineering from Cornell University in 1978. Dissertation research developed the “Real Frequency Technique” for broadband matching an arbitrary load to a resistive generator. He has 37 years experience in system, module, and MMIC design for EW, communication, and radar applications. Currently he is a BAE Systems Global Engineering/Scientific Fellow at Electronic Systems in Nashua, NH. He has over 100 publications and 13 patents. Elected to the grade of IEEE Fellow in 2005 for “Contributions to Monolithic Microwave Integrated Circuits, High Power Amplifiers, and Transmit/Receive Modules.” Received the Martin Marietta Jefferson Cup Award--"Outstanding Technical Leadership in Development and Demonstration of High Power and High Efficiency Monolithic Microwave Integrated Circuit Amplifiers and T/R Modules for Phased Array Radar (June 1993)" and his work is represented in the MTT Symposium MMIC Historical Exhibit‑‑"World's First Octave Band MMIC with Power Output in Excess of 10 Watts (1989)". Silver Award Winner of the BAE Systems Chairman’s Award for Innovation for “Blue Force Locator & Monitor” (2001) and “Next Generation Power Amplifiers” (2012). Received the BAE Systems Engineering Fellows Leave A Legacy Award (2007). Inducted into the Association of Old Crows Electronic Warfare Technology Hall of Fame in 2008. MTT-S, IMS TPC/TPRC, MTT-5, GaAs IC Symposium (2000 Chairman), former ABET ECE PEV, CEAA. Dr. Komiak is an IEEE MTT-S Distinguished Microwave Lecturer (2014-2016).

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| **LOCATION: University of Central Florida****HEC 113** | **Organizer: Prof. Raj Mittra and** **Michael Trampler** **(904)556-9449, Michael.Trampler@gmail.com** |