Joint Seminar of the IEEE Ottawa MTT/AP, CPMT, CAS/EDS Chapters and Department of Electronics, Carleton University

Speaker: Dr. Jianguo Ma
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Chengdu, China

Title: Improved Drain-Source Current Model for HEMTs with Accurate Gm Fitting in All Regions

Brief Overview of the new IEEE Chengdu Section and Electronic Research in Chengdu

Time: 12:00-12:50pm
Tuesday October 7, 2008

Location: 4124 Mackenzie Engineering Building, Carleton University

Abstract In this talk, an improved drain-source current (I-V) model for HEMTs is proposed. The model is simple, easy to extract, and convenient for implementation in simulation tools.

A single modeling equation is developed, allowing accurate prediction of both static and dynamic I-V characteristics. The model parameters can be extracted to match the measured data closely for a wide bias range without sacrificing accuracy. It is validated through DC as well as power measurements using GaAs HEMT transistors.

Also included in the presentation, will be a brief overview of the new IEEE Section recently created in Chengdu, China. Chengdu is becoming one of the fastest growing hubs for electronic research and development in China. As a founding member of the IEEE Section and the founding Chair of the Chengdu Chapter of IEEE Electronic Device Society, Professor Ma will give an insider's perspective of the new IEEE Chengdu Section, and the electronic research and education in the University of Electronic Sciences and Technology of China.

About the Speaker: Professor Jianguo MA received his doctoral degree in Engineering (Dr.-Ing) from Duisburg University, Germany in 1996, under the supervision of Prof. Ingo Wolff. He was with Technical University of Nova Scotia (now part of Dalhousie University) from April 1996 to Sept 1997. Dr. Ma joined Nanyang Technological University of Singapore in October 1997 as a faculty member and founding Director of the Center for Integrated Circuits & Systems. He joined the University of Electronic Science and Technology of China in December 2005 with a starting research award of US $2 millions for creating his labs. With this funding, he has established the Advanced Semiconductor Device Characterizations and Modeling Lab and On-wafer Testing for RFICs Lab, among the best equipped of its kind in Chinese Universities. He currently supervises more than 40 Master and PhD students.
His research areas include RFICs/MMICs and applications; Characterizations and modeling for devices, interconnects and RF packaging; EMC/EMI for wireless; and Wireless sensing networks and applications. He has published 240 technical papers, two books, and 7 US patents granted.

He was the Associate Editor for IEEE Microwave and Wireless Components Letters (2003–2005). He is a founding member of IEEE Chengdu Section and Founding Chair for IEEE EDS Chengdu Chapter.

Prof. Ma is a Changjiang (Yangtze River) Professor awarded by the Ministry of Education of China. He is a recipient of the Young Investigator Award by the National Science Foundation of China.