黄昆半导体科学技术论坛

**第342期讲座**

**报告题目:** **Cost-Effective Techniques for Analog Design, Analog Fault Coverage, and Fast and Accurate Testing of High Resolution ADCs**

**报告人：Prof. Degang Chen (IEEE Fellow, Junkins Chair Professor of Electrical and Computer Engineering, Iowa State University, USA)**

**Abstract：As semiconductor technology advances to the 5G and IoT era, analog and mixed-signal (AMS) functions become more ubiquitous and deeply embedded in integrated circuits and systems. Performance of the AMS functions defines the ultimate performance of the entire system. In this talk, we will briefly review relevant technology trends and some recent developments in fundamental analog design, verification, testing and calibration techniques, for cost-effective performance enhancement of analog and mixed-signal circuits. We will first review some simple and effective design techniques for ultra-small and high linearity temperature sensors, which are critical for power, thermal and reliability management. We will then describe a graph based technique for dramatically improving the time efficiency in analog fault coverage simulation and verification. Next, we will present award-winning techniques for ultra-fast and accurate linearity test of high resolution data converters. Finally, we will demonstrate a cost-effective method for ultra-pure sine wave generation enabling accurate ADC spectral testing at 24 bits and beyond.**

**Biography:Degang Chen received his BS degree in instrumentation and automation from Tsinghua University in 1984 and his PhD degree in control theory from UC Santa Barbara in 1992. He was the John R. Pierce Instructor at CalTech in 1992. After that, he joined Iowa State University where he is currently Professor of Electrical Engineering and the Jerry Junkins Chair in the College Engineering. His industry experience includes Beijing Institute of Control Engineering in 1984-1986, the Boeing Company in 1999 summer, Maxim Integrated in 2001 summer, and Texas Instruments in 2011, 2012 and 2014 summers. His current research interests are in analog and mixed-signal IC design and testing, integrated sensor design, analog verification, and built-in self-test self-calibration for enhancing performance and reliability. Dr. Chen has authored and co-authored 10 patents and over 280 refereed publications in leading journals and top international conferences. Of those, 15 received best paper awards and other honors. Dr. Chen is a Fellow of the IEEE, and is an IEEE Instrumentation and Measurement Society Distinguished Lecturer.**

**时间: 2019年6月11日 (星期二) 上午10:00**

**地点: 中国科学院半导体研究所2号楼303A会议室**

**联系人:尚雅轩 82304453**