



学术报告

ACADEMIC LECTURE

题目: Fundamentals, Challenges, and Future Directions of Electromagnetic Compatibility (EMC) Design in High-Speed Digital Systems

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Jun Fan (S'97-M'00-SM'06) received his B.S. and M.S. degrees in Electrical Engineering from Tsinghua University, Beijing, China, in 1994 and 1997, respectively. He received his Ph.D. degree in Electrical Engineering from the University of Missouri-Rolla in 2000. From 2000 to 2007, he worked for NCR Corporation, San Diego, CA, as a Consultant Engineer. In July 2007, he joined the Missouri University of Science and Technology (formerly University of Missouri-Rolla), and is currently an Assistant Professor with the Missouri S&T EMC Laboratory. His research interests include signal integrity and EMI designs in high-speed digital systems, dc power-bus modeling, intra-system EMI and RF interference, PCB noise reduction, differential signaling, and cable/connector designs. Dr. Fan served as the Chair of the IEEE EMC Society TC-9 Computational Electromagnetics Committee from 2006 to 2008, and was a Distinguished Lecturer of the IEEE EMC Society in 2007 and 2008. He currently serves as the Vice Chair of the Technical Advisory Committee of the IEEE EMC Society. Dr. Fan received an IEEE EMC Society Technica Achievement Award in August 2009.

Abstract : In modern high-speed digital designs, electromagnetic compatibility (EMC) becomes an increasingly critical aspect. It determines whether the designed systems can function properly, comply with regulatory standards, and meet product development requirements such as time to market, performance, reliability, and cost. This presentation starts with a brief introduction on the fundamentals of EMC, including the two sub-areas of signal integrity and power integrity. Then, challenges and state-of-the-art technologies, particularly those for high-speed multilayer printed circuit board designs, are briefly overviewed to give the audience a big picture of the current research interests and directions in both industry and academia. The EMC Laboratory at the Missouri University of Science and Technology, a world leading research institute in the area of EMC, will also be introduced, with potential research opportunities for graduate studies.