学 术 报 告

ACADEMIC LECTURE

题目： **Recent Progress and Future Challenges in the Finite Element Method for Electromagnetic Analysis**

时间： 2012. 06. 29, 上午9:00

地点： 玉泉校区教三 440教室

报告人： **Prof Jin Jian-Ming**

Abstract

The finite element method as one of the major computational electromagnetics techniques has seen tremendous progress during the past 30 years, both in the development of methodologies and application to a variety of challenging engineering applications. In this presentation, a brief and limited review of the major progress of the finite element method for electromagnetic analysis will be presented based on the author's perspective. With all the progress made during the past decades, the finite element method becomes highly powerful for modeling electric devices designed with complex structures and materials. It is the most widely used method in electronic design today. In addition, the method has also been applied to more challenging scattering and radiation problems such as scattering by large and deep cavities, scattering by large and complex coated objects, and radiation by complex antennas and phased-array antennas. In the presentation, we will illustrate some of these applications to demonstrate the unique capabilities of the finite element method and then discuss future challenges in this field.

Jian-Ming Jin is Y. T. Lo Chair Professor in Electrical and Computer Engineering and Director of the Electromagnetics Laboratory and Center for Computational Electromagnetics at the University of Illinois at Urbana-Champaign. He has authored and co-authored 200 papers in refereed journals and 20 book chapters. He has also authored The Finite Element Method in Electromagnetics (New York: Wiley, 1st edition 1993, 2nd edition 2002) and Electromagnetic Analysis and Design in Magnetic Resonance Imaging (Boca Raton, FL： CRC, 1998), co-authored Computation of Special Functions (New York: Wiley, 1996) and Finite Element Analysis of Antennas and Arrays (Hoboken, NJ: Wiley, 2008), and co-edited Fast and Efficient Algorithms in Computational Electromagnetics (Norwood, MA: Artech, 2001). His name often appears in the University of Illinois's List of Excellent Instructors. He was elected by ISI as one of the world's most cited authors in 2002. Dr. Jin is a Fellow of IEEE and a recipient of the 1994 National Science Foundation Young Investigator Award and the 1995 Office of Naval Research Young Investigator Award. He also received the 1997 Xerox Junior and the 2000 Xerox Senior Research Awards from the University of Illinois, and was appointed as the first Henry Magnuski Outstanding Young Scholar in 1998 and later as Sony Scholar in 2005. He was appointed as a Distinguished Visiting Professor in the Air Force Research Laboratory in 1999.