

2016 International Workshop

EMC Research and Application: Challenges and Opportunities

**邵逸夫科学馆211-212室
Zhejiang University
Hangzhou, China
May 23, 2016**

2016 International Workshop

Organizer



浙江大学信息与电子工程学院

College of Information Science & Electronic Engineering, Zhejiang University



电磁信息与电子集成创新研究所

Innovative Institute of Electromagnetic Information and Electronic Integration

Sponsors

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Welcome Message

Thanks to recent progress in electromagnetics and Electronics, electromagnetic compatibility (EMC) is set to enter the mainstream, enabling better performance in a wide range of circuits and systems for scientific exploration and commercial applications. To ride on the wave and to promote academic exchange, we are pleased to invite you to the International Workshop “EMC Research and Application: Challenges and Opportunities” to be held on May 23, 2016 in Zhejiang University, Hangzhou. The Workshop is organized by the Innovative Institute of Electromagnetic Information and Electronic Integration. It is a unique forum, where world-leading scientists from USA, Italy, South Korea, Taiwan and mainland of China share their knowledge on EMC. We look forward to seeing you to the Workshop.



General Chair: Prof. E.P. Li, IEEE Fellow, Vice Dean of Faculty of Information Technology, ZJU

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Program

Morning *(Co-Chair: Prof. W. Y. Yin, IEEE Fellow)*

- 08:30-08:45** Opening Address by Prof. E. P. Li, *IEEE Fellow*, Vice Dean of Faculty of Information Technology, ZJU
- 08:50-09:40** Speech given by Prof. W.C.Chew, *IEEE Fellow*, UIUC
- 09:40-10:30** Speech given by Prof. M. D'Amore, *IEEE Fellow*, Sapienza University of Rome
- 10:30-10:50** Photo Taking and Coffee Break
- 10:50-11:40** Speech given by Prof. M. Swaminathan, *IEEE Fellow*, GIT
- 11:50-13:00** Lunch

Afternoon *(Co-Chair: Prof. X. C. Wei)*

- 14:00-14:50** Speech given by Prof. Jose Schutt-Aine, *IEEE Fellow*, UIUC
- 14:50-15:40** Speech given by Prof. J. H. Kim, *IEEE Fellow*, KAIST
- 15:40-16:00** Coffee Break
- 16:00-16:50** Speech given by Prof. Tzong-Lin Wu, *IEEE Fellow*, NTU
- 16:50-17:40** Speech given by Prof. J. Fan, *IEEE Fellow*, MUST
- 18:00-20:00** Dinner (Invited Guests)

Introduction

Prof. Weng Cho Chew



Prof. Weng Cho Chew received the B.S., M.S., Engineers, and Ph.D. degrees from the Massachusetts Institute of Technology, Cambridge, MA, USA, in 1976, 1978, 1978, and 1980, respectively, all in electrical engineering.

He served as the Cheng Tsang Man Visiting Professor at Nanyang Technological University, Singapore, in 2006, and the Dean of Engineering with the University of Hong Kong, Hong Kong, China, from 2008 to 2011. He was a Professor and the Director of the Center for Computational Electromagnetics and the Electromagnetics Laboratory, University of Illinois at Urbana-Champaign, Champaign, IL, USA. He is the originator of several fast algorithms for solving electromagnetics scattering and inverse problems. He has authored a book entitled *Waves and Fields in Inhomogeneous Media* (IEEE Press, 1999), coauthored two books entitled *Fast and Efficient Methods in Computational Electromagnetics* (Artech House, 2001), and *Integral Equation Methods for Electromagnetic and Elastic Waves* (1st ed., Morgan & Claypool, 2007), authored or coauthored more than 300 journal publications, more than 400 conference publications, and more than 10 book chapters. His research interests include the areas of waves in inhomogeneous media for various sensing applications, integrated circuits, microstrip antenna applications, and fast algorithms for solving wave scattering and radiation problems.

Dr. Chew served on the IEEE Adcom for Antennas and Propagation Society as well as on the Geoscience and Remote Sensing Society. He is the fellow of the Optical Society of America, Institute of Physics, Electromagnetics Academy, and was the National Science Foundation Presidential Young Investigator. He was a Founder Professor with the College of Engineering, and previously, the First Y. T. Lo Endowed Chair Professor with the Department of Electrical and Computer Engineering, UIUC. From 2005 to 2007, he served as an IEEE Distinguished Lecturer. In 2002, the Institute for Science Information Citation elected him to the category of most highly cited authors (top 0.5%). He is currently the Editor in-Chief of the *Progress in Electromagnetic Research Journal*, and on the Board of Directors of Applied Science Technology Research Institute, Hong Kong. He was the recipient of the Schelkunoff Best Paper Award for Antennas and Propagation (AP) Transaction, the IEEE Graduate Teaching Award, the UIUC CampusWide Teaching Award, and the IBM Faculty Awards. In 2008, he was elected by the IEEE AP Society to receive the Chen-To Tai Distinguished Educator Award.

He is the Member of National Engineering Academy, USA.

Introduction

Prof. Marcello D'Amore



Marcello D'Amore is professor emeritus of Electrotechnics and Electromagnetic Compatibility at Faculty of Engineering of the Sapienza University of Rome where he was the first head of the Electrical Engineering Department in 1983. He has published more than 150 papers in the field of electromagnetic compatibility (EMC), nanotechnology and power line communication. Current research interests include shielding and absorbing performances of graphene-based microstructures, nano-interconnects, and HIRF/LEMP interaction to aircraft. He was co-founder of the International Symposium EMC Europe in 1994, guest co-Editor of three Special Issues, Editor-in-Chief (2000-2003) and member of the Advisory Board of IEEE Transactions on EMC. He received awards from IEEE EMC Society and from SAE. He is Fellow of IEEE since 1990, life Fellow since 2010.

Introduction

Prof. Madhavan Swaminathan



Madhavan Swaminathan is the John Pippin Chair in Electromagnetics in the School of Electrical and Computer Engineering (ECE) and Director of the Center for Co-Design of Chip, Package, System (C3PS), Georgia Tech. He formerly held the position of Joseph M. Pettit Professor in Electronics in ECE and Deputy Director of the NSF Microsystems Packaging Research Center, Georgia Tech. Prior to joining Georgia Tech, he was with IBM working on packaging for supercomputers. He is the author of 450+ refereed technical publications, holds 29 patents, primary author and co-editor of 3 books, founder and co-founder of two start-up companies (E-System Design and Jacket Micro Devices) and founder of the IEEE Conference

Electrical Design of Advanced Packaging and Systems (EDAPS), a premier conference sponsored by the CPMT society. He is an IEEE Fellow and has served as the Distinguished Lecturer for the IEEE EMC society. A total of 39 PhD students and 18 MS students have graduated under his supervision. He received his MS and PhD degrees in Electrical Engineering from Syracuse University in 1989 and 1991, respectively.

Introduction

Prof. Jose Schutt-Aine



José E. Schutt-Ainé (S'86–M'86–SM'98–F'07) received the B.S. degree in electrical engineering from the Massachusetts Institute of Technology (MIT), Cambridge, in 1981, and the M.S. and Ph.D. Degrees from the University of Illinois at Urbana-Champaign (UIUC), in 1984 and 1988, respectively.

Upon graduation, he joined the Hewlett-Packard Technology Center, Santa Rosa, CA, as an Application Engineer involved with microwave transistors and high-frequency circuits. In 1983, he joined UIUC, and then joined the Electrical and Computer Engineering Department as a member of the Electromagnetics and Coordinated Science Laboratories where he currently specializes in the study of signal integrity for high-speed digital and high-frequency applications. He has been a consultant for several corporations. His interests span the spectrum from microwave measurements to the generation of computer-aided design (CAD) tools for electronic systems.

Dr. Schutt-Aine was the recipient of several research awards including the 1991 National Science Foundation (NSF) MRI Award, the 1992 National Aeronautics and Space Administration (NASA) Faculty Award for Research, the 1996 NSF MCAA Award, and the 2000 UIUC–National Center for Superconducting Applications (NCSA) Faculty Fellow Award. He is currently serving as Editor-in-Chief of the IEEE Transactions on Components, Packaging, and Manufacturing Technology.

Introduction

Prof. Joung-ho Kim



Dr. Joung-ho Kim received B.S. and M.S. degrees in electrical engineering from Seoul National University, Seoul, Korea, in 1984 and 1986, respectively, and Ph.D degree in electrical engineering from the University of Michigan, Ann Arbor, in 1993. In 1994, he joined Memory Division of Samsung Electronics, where he was engaged in Gbit-scale DRAM design. In 1996, he moved to KAIST (Korea Advanced Institute of Science and Technology). He is currently professor at electrical engineering department of KAIST. Also, he is director of 3DIC-RC (3DIC Research Center) supported by SK Hynix Inc, and SAE-RC (Smart Automotive Electronics Research Center) supported by KET Inc.

Since joining KAIST, his research centers on EMC modeling, design, and measurement methodologies of 3D IC, TSV, Interposer, automotive vehicles, and wireless power transfer (WPT) technologies. He has authored and co-authored over 480 technical papers published at refereed journals and conference proceedings. Also, he has given more than 263 invited talks and tutorials at the academia and the related industries. Recently, he published a book, "Electrical Design of Through Silicon Via," by Springer in 2014. Dr. Joung-ho Kim was Conference chair of IEEE EDAPS 2015 in Seoul, and Joint conference chair of Japan-Korea Microwave society in 2015. He also was the conference chair of IEEE WPTC (Wireless Power Transfer Conference) 2014, held in Jeju Island, Korea. He was appointed as an IEEE EMC society distinguished lecturer in a period from 2009-2011. He received Technology Achievement Award from IEEE Electromagnetic Society in 2010. He is IEEE fellow.

Introduction

Prof. Tzong-Lin Wu



Tzong-Lin Wu (S'93–M'98–SM'04–F'13) received the B.S.E.E. and Ph.D. degrees from National Taiwan University (NTU), Taipei, Taiwan, in 1991 and 1995, respectively.

From 1995 to 1996, he was a Senior Engineer with the Microelectronics Technology Inc., Hsinchu, Taiwan. From 1996 to 1998, he was with the Central Research Institute, Tatung Company, Taipei, Taiwan, where he was involved with the analysis and measurement of electromagnetic compatibility (EMC)/electromagnetic interference (EMI) problems of high-speed digital systems. From 1998 to 2005, he was with the Electrical Engineering Department, National Sun Yat-Sen University. He is currently a Distinguished Professor with the Department of Electrical Engineering of NTU, and serves as a Director in Graduate Institute of Communication Engineering of NTU since 2012. In Summer 2008, he was a Visiting Professor with the Electrical Engineering Department, University of California at Los Angeles (UCLA). His research interests include EMC/EMI, signal/power integrity design for high-speed digital/optical systems, and microwave circuits.

Dr. Wu is the Chair of the Taipei Section, IEICE (2007–2011), the Treasurer of the IEEE Taipei Section (2007–2008), and a Member of the Directors of the IEEE Taipei Section (2009–2010 and 2013–2016). He was a Distinguished Lecturer of the IEEE Electromagnetic Compatibility (EMC) Society (2008–2009). He was the Co-chair of the 2007 IEEE EDAPS Workshop, TPC Chair of IEEE EDAPS Symposium in 2010 and 2012, and General Chair of 2015 Asia Pacific EMC Symposium (APEMC). He received the Excellent Research Award and Excellent Advisor Award of NSYSU (2000 and 2003), the Wu Ta-You Memorial Award of the National Science Council (NSC) in 2005, the Technical Achievement Award of IEEE EMC Society in 2009, the 2010 Best Paper Award of IEEE Transactions on Advanced Packaging, and the Outstanding Research Award from NSC both in 2010 and 2013, 2015 IEEE EMC Society Motohisa Kanda Award for a IEEE T-EMC paper with highest citation for those published papers in past 5 years. He is currently serving as an Associate Editor for the IEEE TRANSACTIONS ON ELECTROMAGNETIC COMPATIBILITY and the IEEE TRANSACTIONS ON COMPONENTS, PACKAGING, AND MANUFACTURING TECHNOLOG.

Introduction

Prof. Jun Fan



Jun Fan (S'97-M'00-SM'06-F'16) 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 Associate Professor. Dr. Fan is the Director of the Missouri S&T EMC Laboratory and the Director of the National Science Foundation Industry/University Cooperative Research Center for EMC. 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 Chair of the Technical Advisory Committee of the IEEE EMC Society, and is an associate editor for the IEEE Transactions on Electromagnetic Compatibility and EMC Magazine. Dr. Fan received an IEEE EMC Society Technical Achievement Award in August 2009.

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Show (Invited Guests)

The Romance of the Song Dynasty

The Romance of the Song Dynasty is an indoor and panorama style large-scale performance. It is based on Hangzhou history and mythology which is mixed by singing, dancing and acrobatics together. The performance will give you a pleasant and impressed feeling and can be compared beauty with the “Red Grindery” in Paris and “O Show” in Las Vegas. It is a must for the tourists coming to Hangzhou!





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