



Three New Distinguished Lecturers for 2016-2017

Vignesh Rajamani,
EMC Society Vice-President for Member Services

The EMC Society Board of Directors has approved three new Distinguished Lecturers (DLs) for the term 2016-2017. They are Kate Remley, Farhad Rachidi and Chunfei Ye. Our other four DLs, Marco Klingler, Jan Niehof, Scott Piper, and Ram Achar continue their terms through December of 2016.

Before introducing the newest DLs, I want to acknowledge the contributions by Dale Becker, Jim Drewniak, Xiaoning Ye, Yihong Qi and John Norgard over the past two years. During their terms, they volunteered to spend many days away from home, family, familiar food, and familiar people. They traveled by airplane, by car, and bus in order to give presentations in the United States, Americas, Asia and Europe. Our Society's local chapter meetings have benefited from the in-person contributions of these bright and learned volunteers. For those of you who have attended one of their presentations, I am sure you know what a very fun and educational experience these folks provide. Please join me in thanking our retiring DLs, and welcoming our new expert speakers.

If you haven't seen a DL at your chapter meeting, you are really missing one of the most popular benefits that our Society offers. I am certain that this year's new speakers will continue the DL tradition of offering excellent technical education, advice, and entertainment. Chapter Chairs can request any of the Distinguished Lecturer's to come to their local chapter meeting. Once the schedule details are agreed by both parties, the EMC Society pays for the travel costs, so the local chapter gets expert speakers, on a wide range of topics, at no cost to the local chapter!

Following are our new Distinguished Lecturers for 2016-2017. Please feel free to contact them directly by phone or email to discuss hosting them at your next chapter meeting, university class, or other special event. You can find contact information under the Distinguished Lecturer section of the EMC Society web site (www.emcs.org).



Dr. Kate Remley

Kate A. Remley (S'92-M'99-SM'06-F'13) was born in Ann Arbor, MI, USA. She received the Ph.D. degree in electrical and computer engineering from Oregon State University, Corvallis, OR, USA, in 1999. From 1983 to 1992, she was a Broadcast Engineer in Eugene, OR,

serving as the Chief Engineer of an AM/FM broadcast station from 1989 to 1991. In 1999, she joined the Electromagnetics Division of the National Institute of Standards and Technology (NIST), Boulder, CO, USA, as an Electronics Engineer. She is currently the Leader of the Metrology for Wireless Systems Project at NIST, where her research activities include development of calibrated measurements for microwave and millimeter-wave wireless systems, characterizing the link between nonlinear circuits and system performance, and developing standardized test methods for RF equipment used by the public-safety community. Dr. Remley received the Department of Commerce Bronze and Silver Medals, an ARFTG Best Paper Award, and is a member of the Oregon State University Academy of Distinguished Engineers. She was the Chair of the MTT-11 Technical Committee on Microwave Measurements from 2008 to 2010 and the Editor-in-Chief of IEEE Microwave Magazine from 2009 to 2011.

Talk 1: An Introduction to Free-Field Measurements of Wireless Devices in Reverberation Chambers: A general overview of wireless tests in RCs

When the antenna is integrated into the body of a wireless device, as it is for cell phones and many other portable devices, performance testing is typically done under free-field conditions. In this overview presentation, we will discuss free-field characterization of some key wireless-device parameters by use of reverberation chambers. Measurements in reverberation chambers must be averaged over a sufficient number of samples in which the modes of the chamber are randomized or "stirred." We will discuss recent research on the use of these chambers for testing devices that transmit modulated signals.

Talk 2: Over-the-Air Testing of Large Cellular Wireless Devices in Reverberation Chambers: Methods for loading and verifying chamber performance

While the smartphone comes to mind when cellular technology is mentioned, the number of machine-to-machine device applications is also on the rise. These devices may take on large form factors such as parking kiosks, vending machines, car dashboards and the fast growing area of wearable devices that must be tested on body phantoms. Reverberation chambers can provide a relatively low-cost, repeatable laboratory environment for testing these larger cellular wireless devices. However, for some

key metrics, the chamber set-up must provide channel conditions similar to those in which the receiver was designed to operate. This may require additional loading of the chamber, complicating both test procedures and uncertainty analyses. We discuss methods for configuring reverberation chambers and assessing uncertainty in the measurement of large-form-factor cellular devices.

Talk 3: Bringing Precision to Measurements for Millimeter-wave 5G Wireless: Conducted and free-field modulated-signal measurements

At millimeter-wave frequencies and for wide modulation bandwidths, the hardware performance of both modulated-signal sources and vector receivers becomes increasingly nonideal. These nonidealities make test and validation of devices, circuits and systems not only more important, but also more difficult. This is especially true because future systems will likely push the limits of modulation complexity and bandwidth to increase data throughput. We will discuss calibration and measurement techniques to correct millimeter-wave modulated-signal measurements illustrating that traditional assumptions at microwave frequencies may not be adequate at millimeter-wave frequencies.



Dr. Farhad Rachidi

Farhad Rachidi (M'93–SM'02–F'10) received the M.S. degree in electrical engineering and the Ph.D. degree from the Swiss Federal Institute of Technology, Lausanne, Switzerland, in 1986 and 1991, respectively. He worked at the Power Systems Laboratory, Swiss Federal Institute of Technology, until 1996. In 1997, he

joined the Lightning Research Laboratory, University of Toronto in Canada, and from April 1998 until September 1999, he was with Montena EMC in Switzerland. He is currently a Titular Professor and the Head of the EMC Laboratory, Swiss Federal Institute of Technology, Lausanne. He is the author or coauthor of 120 scientific papers published in peer-reviewed journals and more than 250 papers presented at international conferences. Dr. Rachidi served as the Vice-Chair of the European COST Action on the Physics of Lightning Flash and its Effects (2005–2009), the Chairman of the 2008 European Electromagnetics International Symposium, and the President of the International Conference on Lightning Protection (2008–2014). He is currently the Editor-in-Chief of the IEEE TRANSACTIONS ON ELECTROMAGNETIC COMPATIBILITY, and the President of the Swiss National Committee of the International Union of Radio Science. In 2005, he was the recipient of the IEEE Technical Achievement Award and the CIGRE Technical Committee Award. In 2006, he was awarded the Blondel Medal from the French Association of Electrical Engineering, Electronics, Information Technology and Communication (SEE). In 2014, he was conferred the title of Honorary Professor of the Xi'an Jiaotong University, China.

Talk 1: Everything You Don't Know about Lightning...and Nobody Else Does Either

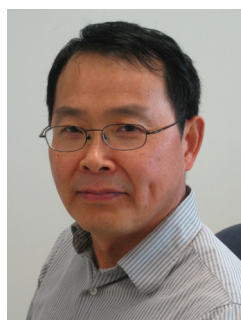
Since 1752 when Franklin conducted his famous kite experiment, significant progress has been achieved in understanding lightning discharge and its effects. However, many questions still remain unanswered in various fields of lightning including lightning physics and lightning protection. In this lecture, an overview of lightning phenomenology and recent progress on lightning research is presented.

Talk 2: Measurement of Lightning Currents at Mount Säntis in Switzerland

This talk reports on the instrumentation of the Säntis telecommunications tower in Switzerland for the measurement of lightning current parameters, as well as provides an overview of the obtained data. The Säntis tower was instrumented in May 2010 and during its first five years of operation; more than 500 flashes were successfully recorded. The Säntis station is the highest lightning current measurement station (2500 m ASL) with the highest incidence (100 flashes/year).

Talk 3: A Review of Field-to-Transmission Line Coupling Models with Particular Reference to Lightning-Induced Voltages

In this lecture, the general theory describing the interaction of an impinging electromagnetic field with transmission lines is presented, with particular reference to lightning-induced voltages.



Dr. Chunfei Ye

Chunfei Ye works at Intel Corporation as a Senior Staff Engineer, responsible for PCH and SOC CPU SI design for SATA, SAS, USB, and package electrical design for all generations of Intel server platforms from 2005. He is the SI team lead and tech lead in the server group. Chunfei Ye obtained the B.

Sci. degree in Mathematics in 1982 from Hangzhou University and the Ph.D. degree in Electrical Engineering in 1994 from Southeast University. Before joining Intel in 2002, his work experience includes working as Associate Professor with Shanghai Tiedao University China, visiting scholar and instructor with Massachusetts Institute of Technology USA, and Senior Engineer at Institute of High Performance Computing, Singapore. Chunfei joined Intel China Ltd in 2002 as a group manager supporting signal integrity and power integrity for Intel communication products. He joined the Intel server group in 2005 and has supported server PCH and SOC CPU SI design since then. Chunfei is IEEE EMC TC 10 Secretary. He holds a few patents and has more than 50 publications in international journals and conference proceedings.

Talk 1: High-speed Signal Integrity Fundamentals

This talk covers key concepts, import factors, enablers, methodology, etc., related to Signal Integrity.

Talk 2: Impedance Discontinuity and Design Optimization for High-speed IOs

This talk will present some findings on channel impedance optimization including buffer and interconnect to achieve optimal Signal Integrity performance by considering specification compliance and cost.

Talk 3: Crosstalk Control, Mitigation and Management in High-speed Differential IOs

This talk addresses the key challenges in Signal Integrity, i.e. crosstalk, by shielding, separation, inductive/capacitive coupling adjustment, crosstalk cancellation, pin-out arrangement, PCB via management, etc. for design optimization. **EMC**

The Distinguished Lecturer Program – How it Works

The EMC Society's Distinguished Lecturer Program provides speakers for Society chapter meetings and similar functions. Each Distinguished Lecturer (DL) can offer one of several pre-prepared presentations on various EMC topics. DLs are appointed by the EMC Society Board of Directors for a two-year term. In 2016 the Society will have seven Distinguished Lecturers serving on alternating terms.

Distinguished Lecturers may give up to six talks per year under the program, which reimburses the DL for their approved traveling expenses up to a recommended limit of \$1,500 per US engagement, or \$2,000 for international engagements. To provide as many opportunities to as many members as possible, the Society encourages hosting chapters whenever possible to absorb some part of the speaker's costs, such as by providing or paying for local transportation, meals, and lodging.

For more information about the EMC Society's Distinguished Lecturer Program, visit our web site at <http://www.emcs.org/dl-main.html>. You can also contact Vignesh Rajamani via email at vignesh@ieee.org.

Please also note the Respected Speaker Bureau (RSB) which is comprised of past DLs and other notable speakers. Information on the RSB can be found on the DL web site.

Also, remember to take a look at the Video DL program information. These DVDs can be used at chapter meetings.



2015 Distinguished Reviewers of the IEEE Transactions on Electromagnetic Compatibility

Antonio Orlandi, IEEE Transactions on EMC, Editor-in-Chief

2015 Distinguished Reviewers (in alphabetical order)



Yoshihiro Baba (S'95-M'99-SM'13) received the B.S., M.S., and Ph.D. degrees from the University of Tokyo, Tokyo, Japan, in 1994, 1996 and 1999, respectively. In 1999, he joined Doshisha University, Kyoto, Japan, where since 2012 he has been a Professor. From April 2003 to August 2004, he was a Visiting Scholar at the University of Florida. He was a 2013 Distinguished

Reviewer of the IEEE Transactions on EMC. He received the Technical Achievement Award from the IEEE EMC Society in 2014. He was a Co-chairperson of the Technical Program Committee (TPC) of the 2013 Asia-Pacific International Conference on Lightning (APL 2013), and is the APL 2015 TPC chairperson. He is the Convener of C4.37 Working Group of the International Council of Large Electric Systems. He has been an Editor of the IEEE Transactions on Power Delivery since 2009.



Johan Catrysse (M'78 - SM'05 - LSM'12) was born in Brugge, Belgium. He received the M.S. degree in electrical engineering from the University of Ghent (Belgium) in 1971, and the Ph.D. degree from the KULeuven in 2005. He was a full professor at the Katholieke Universiteit Leuven, Technology Campus Oostende (formerly Catholic University College KHBO in Oostende). He

became involved in EMC research in 1984, in the domain of characterizing conductive plastics on their shielding effectiveness behaviour. A few years later, research resulted in the development of two types of measuring cells, also suited for the characterization of conductive gaskets. In 1991, a full EMC research laboratory was established, with the main focus on shielding issues and the testing of large machinery. In 2002, the focus of the laboratory was expanded into the global reliability of electronic systems, ranging from EMC to HALT testing at the Flanders Mechatronics Engineering Centre (FMEC). Prof. Catrysse is co-founder and mem-