IEEE | EMC SOCIETY

2026 IEEE INTERNATIONAL SYMPOSIUM ON ELECTROMAGNETIC COMPATIBILITY, SIGNAL & POWER INTEGRITY

AUGUST 3-7

EMC+ SIPI 2026

DALLAS, TEXAS

ADVANCE PROGRAM

THREE KEYNOTE SPEAKERS

EXHIBIT HALL

TECHNICAL PROGRAM DETAILS

EDUCATION COURSES

2026.EMCSIPI.ORG

2026 IEEE INTERNATIONAL SYMPOSIUM ON ELECTROMAGNETIC COMPATIBILITY, SIGNAL & POWER INTEGRITY

AUGUST 3-7

EMC+SIPI 2026

DALLAS, TEXAS

HILTON ANATOLE HOTEL

REGISTRATION IS OPEN!

Register by June 30 for Early Discounts

BENEFITS OF ATTENDING

200+ TECHNICAL SESSIONS,

Workshops & Tutorials, Peer-Reviewed Technical Papers, and Special Sessions with the world's leading engineers in EMC and SIPI.

"ASK THE EXPERTS" PANELS

Bring your questions or simply listen and learn from the experts!

GLOBAL STANDARDS

Hear updates, ask questions, and attend Working Group Meetings as part of the "Standards Week" special track.

LIVE DEMONSTRATIONS

Presented by industry experts to learn how to solve real-world problems.

ENHANCE YOUR KNOWLEDGE OF EMC AND SIPI

during the educational courses for Clayton R. Paul Global EMC University, Global SIPI University, and the NEW Aerospace EMC Mid-Career Training.

NETWORKING

during the Welcome Reception, the Gala Dinner, Young Professionals, and Women in Engineering events.

BRING THE FAMILY

Enjoy the Hilton Anatole Hotel's three acre outdoor pool complex with slides and a lazy river!

#IEEE_ESP26

2026.emcsipi.org

IEEE | EMC SOCIETY

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PROMOTE EMC+SIPI 2026 ON YOUR SOCIAL CHANNELS!

We've created this content for your convenience to promote the 2026 EMC+SIPI Symposium via social media

Use our logos and sample text below to promote visitors to your booth, attendance at your presentation, or simply your brilliance in attending the world's premier gathering of EMC and SIPI professionals!

2026.emcsipi.org

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IEEE | EMC SOCIETY

CHAIR'S MESSAGE

WELCOME FROM ZHONG CHEN
THE 2026 EMC+SIPI GENERAL CHAIR

Welcome to the 2026 IEEE International Symposium on Electromagnetic Compatibility, Signal and Power Integrity!

On behalf of the IEEE EMC Society, I am pleased to invite you to join us for our annual Symposium from August 3–7, 2026, in vibrant downtown Dallas, Texas. With its thriving tech community and dynamic energy, Dallas offers an ideal setting for a week dedicated to EMC, Signal Integrity, and Power Integrity.

Consider this Symposium your professional "sabbatical"—a chance to recharge your skills with the latest design and measurement techniques. Our comprehensive technical program features a wide range of in-depth sessions, including paper sessions where researchers present their latest findings. You will also find popular programs like the Henry W. Ott Fundamentals of EMC Tutorial, the Clayton R. Paul Global EMC University, and the Global Signal Integrity and Power Integrity University, where international experts will share their insights and expertise.

You will also find hands-on workshops, standards sessions, experiments, demonstrations, and an expansive technical exhibition. Special events in the exhibit hall are designed to foster direct engagement between attendees and industry leaders. Additionally, the open Standards Committee meetings provide a unique opportunity to hear directly from those shaping future standards. If you have questions about standards, this is the perfect venue to get answers face-to-face.

The Symposium will be held at the Hilton Anatole Dallas, located just four miles from Love Field and 17 miles from Dallas–Fort Worth International Airport. With over 1,600 guest rooms, multiple restaurants, and spacious meeting and exhibition spaces, the venue offers convenience and comfort under one air-conditioned roof. You will also have access to amenities such as an indoor pool, a lazy river, and a complimentary water park!

Stay connected by visiting our website regularly or subscribing to our newsletter for updates delivered directly to your inbox.

We look forward to welcoming you to Dallas! If you have any questions, feel free to reach out to us at symposiuminfo@emcss.org.

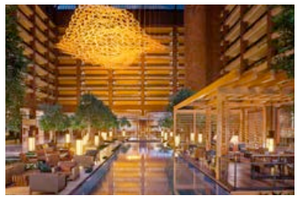
Zhong Chen
General Chair, 2026 IEEE International Symposium on Electromagnetic Compatibility, Signal & Power Integrity (EMC+SIPI)

LEARN ABOUT DALLAS, TEXAS

ABOUT DALLAS

Dallas grew from a small 1840s trading post on the Trinity River into one of the most dynamic metropolitan centers in the United States. Founded by John Neely Bryan, the settlement thrived because of its strategic location along regional trade routes and later exploded in size with the arrival of multiple rail lines in the 1870s, which turned it into a major commercial crossroads. Over time, Dallas became a hub for banking, cotton, oil, technology, and transportation, shaping a diverse economy that continues to drive its growth. Today, Dallas is a leading hub for technological innovation, supporting the sixth-largest tech workforce and the most influential electronics and semiconductor companies in the United States. Downtown Dallas is a showcase of architectural brilliance and is home to thousands of restaurants for very palate.

HILTON ANATOLE HOTEL & MEETING SPACE



EMC+SIPI 2026 attendees will enjoy the convenience of having the hotel and conference center in one climate-controlled space!

Hilton Anatole first opened its lobby doors in Dallas, Texas in 1979. Since then, countless celebrities, dignitaries, conventions, and charities have passed through our storied halls.

From state-of-the-art business options, a water complex, spa and fitness center, Top Golf Swing Suite and on-site dining options, the Hilton Anatole has an abundance of amenities and services for conference attendees.

Housing is handled exclusively through the hotels linked from the Symposium website and not through any third-party vendors. To ensure you receive the room block rate, please only make your reservation through the provided link.

CLICK HERE TO RESERVE YOUR ROOM
EMC AND GOVERNMENT GROUP RATES AVAILABLE

THE 2026 EMC+SIPI COMMITTEE EXTENDS OUR GRATITUDE TO THIS YEAR'S SPONSORS FOR THEIR SUPPORT.

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emv
Cologne, 24 – 26 March 2026

IN COMPLIANCE Magazine

Microwave Journal

安全与电磁兼容
SAFETY & EMC

Signal Integrity Journal

GENERAL INFORMATION

EMC SOCIETY®

BRINGING COMPATIBILITY TO ENGINEERING INNOVATIONS SINCE 1957

The IEEE EMC Society has been at the pivot point of engineering technology for over a half-century. With a long history of developments in Electromagnetic Compatibility and Electromagnetic Environmental Effects, the Society brings sharp focus to methods and practices for proper performance of energy, electrical, communications, information technology and wireless systems. The Society promotes information sharing through regional chapters and international symposia. Collaboration across the research, design, test, regulatory and media industries has helped shape the world as we know it.

LEADING EDGE INFO

- EMC Measurements
- Signal & Power Integrity
- EMI Control
- EMC Management
- Low Frequency EMC
- Computational Electromagnetics
- High Power Electromagnetics
- Electromagnetic Environments
- Smart Grid EMC
- Regulatory Requirements for EMC, ESD, EMI, and SIPI

... AND MORE!

CALL FOR VOLUNTEERS

We are in need of volunteers to help make EMC+SIPI 2026 run as smoothly as possible. Previous year's volunteers have made the event a success.

We welcome new and past volunteers to help with the following positions:

- Help with Registration
- Collect tickets and direct traffic at the Welcome Reception, and Gala Events
- Host Poster Papers
- Monitor Exhibit Hall Demonstrations
- Monitor Technical Papers, Workshops, and Tutorials

Participating as a volunteer has some great perks!
Registered attendees contributing as a volunteer will receive:

- An opportunity to connect with other peers and industry professionals
- Food and beverages during your hours of service
- Free Symposium shirt

Local residents, who are not registered for the Symposium, will also receive these great benefits:

- Free one-day registration for every day you volunteer
- See what's happening in the EMC and SIPI fields
- Free parking pass for the day you volunteer

TO VOLUNTEER, PLEASE VISIT OUR WEBSITE AT:

2026.emcsipi.org/programs/volunteer-info

WELCOME FROM BENOIT DERAT

THE 2026 TECHNICAL PAPER CHAIR

Welcome to the 2026 IEEE International Symposium on Electromagnetic Compatibility, Signal and Power Integrity (EMC+SIPI).

On behalf of the Technical Program Committee, I am delighted to welcome you to Dallas, Texas, and to the Hilton Anatole in the Dallas Design District. I hope to meet many of you during a week of technical exchange, practical learning, and conversation with colleagues across the EMC and SIPI community.

I encourage you to attend the special sessions, traditional paper sessions, and the poster session in the exhibit hall. There is much to learn from the latest work of our colleagues. Attend, ask questions, and be challenged. The poster sessions will again provide a valuable one-on-one format and time to visit exhibitors before joining the classroom sessions.

This year's program emphasizes PCB and chip-level EMC, military and space EMC challenges, EMC and SIPI for data centers and high-speed digital applications, and AI/ML methods for EMC and SIPI simulation and measurement.

Four special sessions will examine active areas in our field: "Achieving Power Integrity with AI/ML," "AI Agents and Generative Tools for EMC and SIPI Applications," "Electromagnetic Compatibility Challenges and Safety of Medical Devices in Clinical Environments," and "Electromagnetic Information Security against Leakage and Interference Threats."

We are honored to feature three keynote speakers. Brian M. Kent will revisit the 1967 USS Forrestal carrier disaster. Howard Heck will address 400+G per lane pluggable I/O signal-integrity challenges and design considerations. Hans G. Schantz will discuss electromagnetism, quantum mechanics, and his provocative perspective in "Where Physics Went Wrong."

For deeper study, consider one of more than thirty workshops or tutorials. Tutorials provide practical instruction, while workshops offer discussion and interaction. The Experiments and Demonstrations program, with twenty live demos, gives attendees a hands-on look at EMC and SIPI concepts in action. Engage with the presenters, then bring those ideas back to your colleagues.

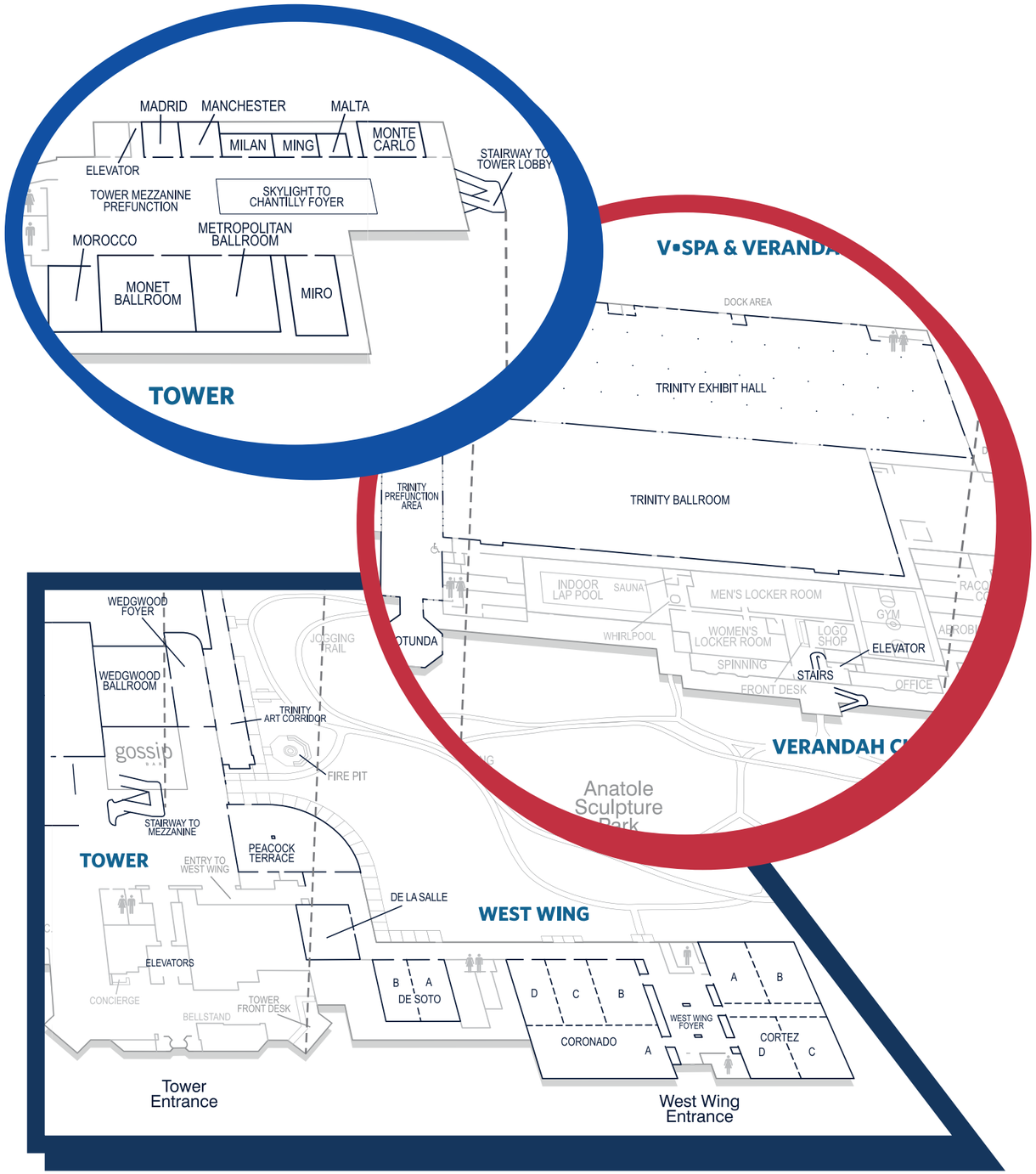
Our "Ask the Experts" panels will address military and space EMC challenges and real-world EMC problem solving. Technical Committee meetings are open to all attendees and offer a direct way to learn more about the EMC and SIPI community, serve the Society, and share your expertise.

For foundational training, the program includes the Clayton R. Paul Global EMC University, Global SIPI University, and Henry W. Ott Fundamentals of EMC Tutorial.

I am confident that the breadth and depth of this year's technical program will provide a valuable experience for you regardless of where you are in your career and whether you are in academia or industry. It will also be a chance to build your professional network, to catch up with old friends, and to make new ones. See you in Dallas.

Sincerely,
Benoit Derat
Technical Program Chair, EMC+SIPI 2026

ROOM MAPS



INTRODUCING THREE KEYNOTE PRESENTATIONS DURING EMC+SIPI 2026!

Three renowned speakers join us for the EMC+SIPI 2026 Symposium to share their expert knowledge and first-hand experiences in the pursuit of education and a chance to share their passion in EMC and SIPI which has sparked profound technological advancements in the field.

Learn about each speaker and their unique achievements.

DATE: Tuesday, August 4
TIME: 8:00 AM – 8:45 AM
LOCATION: Trinity Ballroom

Was it the Radar? Respectfully Revisiting the 1967 US Navy USS Forrestal Carrier Disaster

Brian M. Kent
Ph.D., Fellow, IEEE, AMTA, Private Consultant, RF/EO/ Technology, Centerville, OH, USA

In 1967 the United States Navy Carrier USS Forrestal (CVA-59) was preparing for wartime missions over North Vietnam. The ship was preparing to launch more than 20 fully armed A-4 Skyhawk and F-4 Fighter jets, all fully fueled and armed. At 10:51 am, an un-commanded F-4 Zuni Missile launched on the deck, striking a neighboring A-4 and starting a fire and explosions. Quenching the fire nearly capsizes the ship, which is saved through the heroics of the sailors aboard. The US Navy conducted a thorough accident investigation, hundreds of follow-up technical articles in the aerospace and NASA literature, including current EMI design books, blaming the initiation event on EMI from on the on-board AN/SPS-43VHF search radar. **But is that what really happened?**

400+G per Lane Pluggable I/O Interface Signal Integrity Challenges & Design Considerations

Howard Heck
TE Connectivity

This presentation discusses the signal integrity related challenges that the industry faces as we scale pluggable I/O interfaces to 448G. We will begin by outline desired electrical characteristics (insertion loss, reflections cross-talk) for passive channels. We then describe the ways in which physical structures and manufacturing consider may limit the scalability of existing channel component and discuss the implications on the choice of modulation scheme for 448G operation. The limitations suggest that new approaches are needed, and we will describe one such approach that can provide an optimized solution that overcomes the challenges that exist with existing channel structures.

DATE: Tuesday, August 4
TIME: 8:45 AM – 9:30 AM
LOCATION: Trinity Ballroom

DATE: Wednesday, August 5
TIME: 9:00 AM – 10:00 AM
LOCATION: Trinity Ballroom

How Electromagnetism and Quantum Mechanics Work, and Where Physics Went Wrong

Hans G. Schantz
nou Systems, Inc.

This talk presents the central thesis of the Fields & Energy Project: electromagnetism is not best understood as the action of a single entity, the photon, endowed with the mutually contradictory properties of localized particle and non-localized wave. Instead, electromagnetic phenomena emerge from the interaction of two distinct elements: spatially extended fields that behave as waves, and energy that, in the quantum limit, is transferred in discrete amounts. Fields guide energy; energy does not constitute the field.

CLICK TO VIEW THE SPEAKER BIOS AND FULL ABSTRACTS

GLOBAL SIGNAL INTEGRITY AND POWER INTEGRITY (SIPI) UNIVERSITY

TUESDAY – WEDNESDAY – THURSDAY, AUGUST 4 - 6, 2026

The following information is preliminary and subject to change.

The Organizing Committee of the 2026 IEEE International Symposium on Electromagnetic Compatibility and Signal & Power Integrity (EMC+SIPI) is planning to offer a high-quality, educational event encompassing Signal Integrity (SI) and Power Integrity (PI): the Global Signal Integrity and Power Integrity University.

Similar to the Clayton R. Paul Global EMC University that is held annually during the International Symposium, the intent is to offer two full days of lectures (Tuesday afternoon, all day Wednesday, and Thursday morning) carefully curated to cover basic and advanced concepts of SI & PI during the symposium week. SI & PI are gaining ever-growing attention due to the higher data rates and larger currents in modern high-speed digital systems. Industry requires skilled engineers with a background in these two disciplines to address the increasing complexity and challenges of electronic system design.

The IEEE EMC Society therefore decided to offer again – after the first two successful editions at the Symposium in Phoenix, Arizona (2024) and Raleigh, North Carolina (2025) – two full days of courses during the EMC+SIPI Symposium 2026 to bridge this gap. The mission of the Global SIPI University will be to give students, technicians, and engineers the opportunity to acquire SI & PI skills directly from experienced and well-known instructors from both industry and academia.

The program offers both lectures and practical demonstrations. The intent is to expand the discussion on the background concepts and to provide a more detailed presentation of advanced methods for addressing the current design challenges. Moreover, the demos will encompass the use of instruments typically employed for analysis, measurement and troubleshooting for signal and power integrity.

COURSE PRE-REQUISITES:

Electrical engineers with a professional background in EMC that want to dive into or broaden their skills in state-of-the-art signal integrity and power integrity.

Full symposium registration required in addition to the SIPI GU course fee.

RATES

Advanced Registration Price: $325

$380 (if registered after June 30, 2026)

Photo by Patrick Andre

Read the instructor bios and presentation abstracts:
2026.emcsipi.org/programs/technical-programs/global-sipi-university

GLOBAL SIGNAL INTEGRITY AND POWER INTEGRITY (SIPI) UNIVERSITY SPEAKERS AND TOPICS

TUESDAY (AFTERNOON) 1:00PM – 5:00PM AUGUST 4, 2026

TIME	TOPIC	PRESENTER/INSTRUCTOR
1:00 – 1:30pm	**Registration / Introduction**	
1:30 – 2:15pm	**Opening Session:** Overview of High-Speed Signal Integrity (SI)	**Bhyrav Mutnury (AMD)**
2:15 – 3:00pm	**Introduction to SI and PI:** Evolution from the Basics to the Current Technology	**Francesco de Paulis (Univ. L'Aquila)**
3:00 – 3:30pm	**Coffee Break / Networking**	
3:30 – 4:15pm	**Signal Integrity I:** Transmission Line Effects, Lumped Effects, Passive Interconnect Design, Terminations and Reflections	**John Golding (Siemens)**
4:15 – 5:00pm	**Signal Integrity II:** How Interconnects Work: The Physics of Losses, Reflections, and Coupling	**Yuri Shlepnev (Simberian)**

WEDNESDAY (FULL DAY) 8:00AM – 5:00PM AUGUST 5, 2026

TIME	TOPIC	PRESENTER/INSTRUCTOR
8:30 – 9:15am	**Signal Integrity III:** S-params In the Eyes of the Beholder: Interconnect Design Considerations at 224 Gb/s and 448 Gb/s	**Brandon Gore (Samtec)**
9:15 – 10:00am	**Signal Integrity IV:** Measurements for Signal Integrity (VNA and TDR)	**Matteo Cocchini (IBM)**
10:00 – 10:30am	**Coffee Break / Networking**	
10:30 – 11:15am	**Keynote:** Powering AI Performance from Silicon to System: The Role of SIPI	**Barry Katz (Mathworks)**
11:15am – 12:00pm	**Signal Integrity Demo I:** Time Domain – Scope Measurements of the Impact of Transmission Line Effects and Reflections Demonstrating Ringing Noise, Time of Flight and Eye Diagrams	**Eric Bogatin (Univ. Colorado)**
12:00 – 1:30pm	**Lunch Break / Networking**	
1:30 – 2:15pm	**Signal Integrity V:** Simulation and Modeling of Signal Integrity for High-Speed Wired Communications	**Renato Rimolo Donadio (TEC Costarica)**
2:15 – 3:00pm	**Signal Integrity Demo I:** Frequency Domain - VNA (Calibration and Channel Analysis)	**Paul Peterson (R&S)**
3:00 – 3:30pm	**Coffee Break / Networking**	
3:30 – 4:15pm	**Signal Integrity VI:** Unmasking The DUT: Fixture De-Embedding Essentials	**Giorgi Maghlakelidze (Nvidia)**
4:15 – 5:00pm	**Power Integrity I:** Power Integrity Fundamentals	**Dan Chirpich (Re:Build AppliedLogix)**

THURSDAY (MORNING) 8:00AM – 12:00PM AUGUST 6, 2026

TIME	TOPIC	PRESENTER/INSTRUCTOR
8:30 – 9:15am	**Power Integrity II:** VRM Basics, VRM Modeling, and IR Drop	**Chulsoon Hwang (MS&T)**
9:15 – 10:00am	**Power Integrity III:** Package and IC PDN, On-Chip VRM	**Michael Hill (Intel)**
10:00 – 10:30am	**Coffee Break / Networking**	
10:30 – 11:15am	**Power Integrity Demo I:** Low Impedance PDN Measurements	**Benjamin Dannan (Signal Edge Solutions)**
11:15am – 12:00pm	**Closing Session:** Understanding Vias for Better SI and PI – 50+ Years of Physics-Based Modeling	**Christian Schuster (TUHH)**

CO-CHAIR: Francesco de Paulis

Univ. L'Aquila, L'Aquila, Italy

Francesco de Paulis (Senior Member IEEE) received the M.S. degree in Electrical Engineering in May 2008 from Missouri University of Science and Technology (formerly University of Missouri-Rolla), USA, and the Ph.D. degree in Electrical and Information Engineering in 2012 from the University of L'Aquila, L'Aquila, Italy. He is currently an Associate Professor at the Electromagnetic Compatibility and Signal Integrity Laboratory at the University of L'Aquila. His main research interests are in signal and power integrity, high speed channel design and optimization, composite materials for shielding and absorption, RF interference in mixed-signal system, TSVs in silicon chips and interposers, antenna design and measurement techniques, remote fault detection in transmission lines, microwave design of electronic devices and systems for space applications.

CO-CHAIR: Majid Ahadi Dolatsara

Keysight Technologies

Dr. Majid Ahadi Dolatsara received his B.Sc. degree in electrical engineering from the K.N.Toosi University of Technology, Tehran, Iran, in 2013, and his M.Sc. degree in electrical engineering from the Colorado State University, Fort Collins, CO, USA, in 2016. He received his Ph.D. degree in electrical and computer engineering with a minor in computer science from the Georgia Institute of Technology, Atlanta, GA, USA in 2021, where he focused on development of machine learning based electronic design automation (EDA) tools for signal integrity and high-speed channels.

He has been with Keysight Technologies, Calabasas, CA, USA, since 2021, where he currently works as a senior machine learning R&D engineer developing ML-based modeling and optimization tools for EDA.

CLAYTON R. PAUL GLOBAL UNIVERSITY

The following information is preliminary and subject to change.

ADVANCE YOUR EMC KNOWLEDGE AND CAREER WITH IN DEPTH CLASSES ON EMC AT THE IEEE EMC SOCIETY'S PREMIER EDUCATIONAL EVENT.

Chair: Dr. Todd Hubing
Professor Emeritus, Clemson University, IEEE Fellow, ACES Fellow, Past President, IEEE EMC Society

The 19th edition of Clayton R. Paul Global EMC University is an opportunity to learn from university faculty that are internationally recognized for outstanding EMC instruction. The first Global EMC University took place at the 2007 International Symposium on EMC in Honolulu. Dr. Clayton Paul invited EMC instructors from around the world to teach fundamental EMC topics as they would be covered in a university course. "Global EMC University" proved to be very popular and has been a fixture at every IEEE EMC symposium since then. In 2013, the IEEE EMC Society Education Committee renamed the event "Clayton R. Paul Global EMC University" and established strict standards for both the topics and instructors to ensure a high-quality educational experience.

Students attending this course can expect rigorous coverage of important EMC topics with plenty of opportunities to interact with the instructors. There is no exam, but students must attend all 16 hours of instruction to receive a course certificate.

PLEASE NOTE: The Clayton R. Paul Global University course content is intended for engineers who have been working in EMC and/or SIPI for several years and wish to be able to deepen their understanding. It is suggested that those who would like to attend will have already participated in the "Fundamentals Tutorial" held on Monday during the annual IEEE EMC Society Symposium week.

RATES

Advanced Registration Price: $325

$380 (if registered after June 30, 2026)

Photo by Richard Georgerian

READ THE INSTRUCTOR BIOS
2026.emcsipi.org/programs/technical-programs/global-university

CLAYTON R. PAUL GLOBAL UNIVERSITY SPEAKERS & TOPICS

The course begins with a short introduction followed by ten presentations that are designed to encourage attendees' questions. Attendees will have opportunities for discussions with the instructors.

SIGNAL SPECTRA
Dr. Flavia Grassi
Professor, Politecnico Milano

NON-IDEAL BEHAVIOR OF COMPONENTS
Dr. Niek Moonen
Professor,
University of Twente, Netherlands

RADIATED EMISSIONS
Mr. Lee Hill
MSEE, Missouri University of Science & Technology
Founding Partner, SILENT Solutions LLC & GmbH
Adjunct Faculty, Worcester Polytechnic Institute (WPI)
Associate Tutor, University of Oxford

ELECTROSTATIC DISCHARGE
Dr. Daryl G. Beetner
Professor, Missouri University of Science & Technology
Director, Missouri S&T Electromagnetic Compatibility Laboratory
Director, NSF Center for Electromagnetic Compatibility

PCB DESIGN FOR EMC COMPLIANCE
Dr. Todd Hubing
Professor Emeritus, Clemson University
IEEE Fellow, ACES Fellow
Past President, IEEE EMC Society

EMC FILTERS
Dr. Frank Leferink
Professor, University of Twente
Technical Authority, THALES Nederland
IEEE Fellow

SHIELDING
Dr. Bogdan Adamczyk
Professor, Grand Valley State University (GVSU)
Director, Electromagnetic Compatibility Center

CROSSTALK
Dr. Michael Cracraft
Associate Professor, Rose Hulman Institute of Technology

TUESDAY (AFTERNOON) 1:00PM – 5:30PM AUGUST 4, 2026

TIME	TOPIC	PRESENTER/INSTRUCTOR
1:00 – 1:15pm	Registration and Introductions	
1:15 – 3:00pm	Non-Ideal Behavior of Components	Niek Moonen (University of Twente)
3:30 – 5:30pm	Signal Spectra	Flavia Grassi (Politecnico Milano)

WEDNESDAY (ALL DAY) 8:00AM – 5:30PM AUGUST 5, 2026

TIME	TOPIC	PRESENTER/INSTRUCTOR
8:00 – 10:00am	Crosstalk	Michael Cracraft (Rose Hulman Institute of Technology)
10:30am – 12:00pm	EMC Filters	Frank Leferink (University of Twente)
1:00 – 3:00pm	Radiated Emissions	Lee Hill (Worcester Polytechnic Institute)
3:30 – 5:30pm	Shielding	Bogdan Adamczyk (Grand Valley State University)

THURSDAY (MORNING) 8:00AM – 12:00PM AUGUST 6, 2026

TIME	TOPIC	PRESENTER/INSTRUCTOR
8:00 – 10:00am	Electrostatic Discharge	Daryl Beetner (Missouri S&T)
10:30 – 11:45am	PCB Design for EMC	Todd Hubing (Clemson University)
11:45am – 12:00pm	Closing Session	

AEROSPACE MID-CAREER TRAINING

The following information is preliminary and subject to change.

THIS TRAINING PROVIDES AN OPPORTUNITY TO ADVANCE YOUR KNOWLEDGE OF AEROSPACE ELECTROMAGNETIC COMPATIBILITY (EMC) ASSOCIATED WITH TRANSITIONING FROM ENTRY LEVEL AEROSPACE ENGINEER TO A MID-CAREER AEROSPACE ENGINEER.

This is the inaugural offering of the Aerospace Mid-Career Training. Participants in this training will have the opportunity to interact with experts who have worked in the Aerospace industry for 15 to 30+ years and have contributed to the advancement of EMC practices specifically developed to address the challenging environments and conditions that aerospace vehicles must operate within. They will also have the opportunity to ask questions of the presenters on how they navigated their careers, from entry level engineers to senior level engineers and how to manage the transition into and through mid-career in the Aerospace Industry.

PLEASE NOTE: The Aerospace Mid-Career Training technical content is intended for engineers who have been working in Aerospace EMC and/or Signal Integrity Power Integrity (SIPI) for several years and wish to deepen their understanding of the subject area, or who have worked in EMC for many years in other areas and wish to transition into the Aerospace area. Training participants are strongly encouraged to attend the Military and Space Workshop held on Monday as well as the Aerospace EMC Workshop held during the symposium week. Further, it is assumed that all participants will have attended the Fundamentals of EMC Tutorial offered each year on the Monday of the symposium week. The planning for the training and these Workshops has been coordinated so that there will be little overlap in presentation content, with the Mid-Career Training covering specific topic areas in greater depth.

The course size is strictly limited to encourage interaction between the presenters and participants. Registration will be confirmed on a first-come, first-served basis.

RATES

Advanced Registration Price: $160

$190 (if registered after June 30, 2026)

Read the instructor bios and presentation abstracts:
2026.emcsipi.org/programs/technical-programs/aerospace-mid-career-training

AEROSPACE SPEAKERS

TRANSITIONING FROM EARLY CAREER TO MID-CAREER AEROSPACE EMC ENGINEER
Randy J. Jost
IEEE Life Senior Member, Ball Aerospace (Retired), Adjunct Professor at Utah State University

E3 REQUIREMENTS AND PROCESSES
David Novotny
SpaceX

E³ VEHICLE DESIGN AND INTEGRATION
John McCloskey
EMC-Closkey, NASA (Retired)

E³ AVIONICS / PAYLOADS: UNDERSTANDING SPACECRAFT AND AIRCRAFT AVIONICS HARDWARE FOR THE DEVELOPMENT OF APPROPRIATE EMC REQUIREMENTS AND TESTING
Reinaldo "Ray" Perez
Jet Propulsion Laboratory (Retired).

E³ SYSTEMS ANALYSIS
Paul Bremner
Robust Physics

E³ SYSTEMS TEST AND VALIDATION
John La Salle
Northrop Grumman

E³ SYSTEMS TEST AND VALIDATION: EVALUATION OF INTERFERENCE PATH LOSS ON LARGE COMMERCIAL AIRCRAFT USING STATISTICAL METHOD
Dennis Lewis
The Boeing Company

ORGANIZERS:

Janet O'Neil, *ETS-Lindgren*

John La Salle, *Northrop Grumman*

Randy Jost, *IEEE Life Senior Member, Ball Aerospace (Retired), Adjunct Professor at Utah State University*

Dennis Lewis, *The Boeing Company, Professor Emeritus, Clemson University, IEEE Fellow, ACES Fellow, Past President, IEEE EMC Society*

TIME	TOPIC	PRESENTER/INSTRUCTOR
8:15am – 8:30am	Introduction to Workshop	Janet O'Neil (ETS-Lindgren) John La Salle (Northrop Grumman)
8:30am – 9:15am	Transitioning from Early Career to Mid-Career Aerospace EMC Engineer	Randy J. Jost (Ball Aerospace - Retired)
9:15am – 10:00am	E³ Requirements and Processes	David Novotny (SpaceX)
10:00am – 10:30am	Coffee Break / Networking	
10:30am – 11:15am	E³ Vehicle Design and Integration	John McCloskey (EMC-Closkey)
11:15am – 12:00pm	E³ Avionics / Payloads	Ray Perez (Jet Propulsion Laboratory - Retired)
12:00pm – 1:30pm	Lunch	
1:30pm – 2:15pm	E³ Systems Analysis	Paul Bremner (Robust Physics)
2:15pm – 3:00pm	E³ Systems Test and Validation	John La Salle (Northrop Grumman)
3:00pm – 3:30pm	Coffee Break / Networking	
3:30pm – 4:15pm	E³ Systems Test and Validation	Dennis Lewis (The Boeing Company)
4:15pm – 5:00pm	Questions / Panel Session	

The following information is preliminary and subject to change.

WT_A1 TUTORIAL

HENRY W. OTT FUNDAMENTALS OF ELECTROMAGNETIC COMPATIBILITY

8:30 AM - 5:00 PM

Room: Coronado A

Sponsored by Education Committee

Chair:
Patrick DeRoy, *Analog Devices Inc*
Co-Chair:
Matt Juszczyk, *Rockwell Collins Aerospace & Electronics Inc*

ABSTRACT:

This tutorial is an overview of many of the major topics that need to be considered when designing an electronic product or system to meet signal and power integrity (SIPI) and electromagnetic compatibility (EMC) requirements. The tutorial will present the foundational ideas from physics and mathematics and will demonstrate the engineering approaches to help the attendees to successfully design, evaluate, diagnose, and/or solve EMI problems. The main objective of this tutorial is to provide a learning opportunity for those that are new to EMC as well as provide a review of the basics to those who already have some experience in this area.

PLANNED SPEAKERS & TOPICS

Introduction to Fields and Coupling
John C. McCloskey
EMC-Closkey, USA

Grounding vs. Current Return
Todd Hubing
LearnEMC, USA

Transmission Lines and Signal Integrity
Eric Bogatin
University of Colorado Boulder, USA

PCB Decoupling
Chulsoon Hwang
Missouri University of Science and Technology, USA

Conducted EMI: Root Causes and Mitigations
Niek Moonen
Universiteit Twente, Netherlands

The Unintentional Antenna: The Root Cause of Radiated EMI Problems
Lee Hill
SILENT Solutions LLC & GmbH, USA

Transient Susceptibility
Matt Juszczyk
Rockwell Collins Aerospace & Electronics Inc, USA

EMC in Systems
Karen Burnham
EMC United, USA

The following information is preliminary and subject to change.

WT_A2 TUTORIAL

INTRODUCTION TO MODELING/ SIMULATION TECHNIQUES

8:30 AM - 12:00 PM

Room: Cortez D

Sponsored by TC-9 Computational Electromagnetics

Chair:
Bruce Archambeault, *Missouri University of Science and Technology*

ABSTRACT:

This tutorial will focus on the various simulation techniques, how they work, their strengths and weaknesses. The popular techniques of Finite-Difference Time-Domain (FDTD), Method of Moments (MoM), the Finite Element Method (FEM), and the Partial Element Equivalent Circuit technique will all be discussed with a focus on simulation in the real-world.

PLANNED SPEAKERS & TOPICS

Introduction to FDTD
James Drewniak
Missouri S&T EMC Laboratory, Missouri University of Science and Technology, USA

Introduction to Finite Element Method (FEM)
Charles Bunting
OKSTATE Univ, USA

The Partial Element Equivalent Circuit (PEEC) Introduction
Bruce Archambeault
Missouri University of Science and Technology, USA

The Method of Moments
Lijun Jiang
Missouri University of Science and Technology, USA

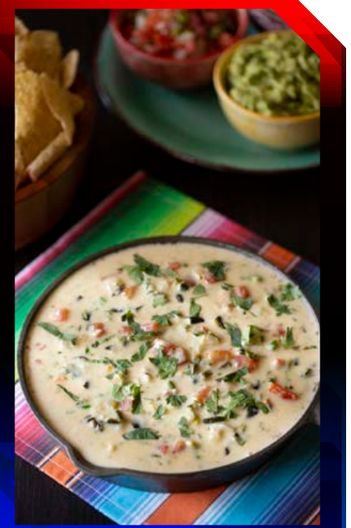
DALLAS FUN FACTS

WHAT IS TEX-MEX?

Tex-Mex means "Texan" + "Mexican" which refers to the blend of American and Mexican culinary traditions as one distinctive style.

Mexican culture and food heavily influenced the evolution of Texas cuisine, and over time, American and Mexican cooking methods adapted to suit Texan tastes. Originating with the Tejano people, the hallmarks of Tex-Mex include yellow cheese, flour tortillas, ground beef, chili-based sauces, and plates served with rice and beans. In Texas, locals often say the best way to judge a Tex-Mex restaurant is by the queso and the salsa.

While you're in Dallas, experience Tex-Mex!



The following information is preliminary and subject to change.

WT_A4 TUTORIAL

BASIC EMC MEASUREMENTS

1:30 PM - 5:00 PM

Room: Cortez D

Sponsored by TC-2 EMC Measurements

Chair:
Monrad Monsen, *Oracle*

ABSTRACT:

There continues to be those entering the EMC field who are performing measurement activity for both emissions and immunity. In addition, there are practitioners who want to get a second opinion to support what they are doing. They are all at least familiar with basic EMC immunity measurements methods that cover a wide range of electromagnetic phenomena. This tutorial will cover both emissions and immunity by highlighting the latest amendment to a major multimedia emissions standard and a selection of immunity testing standards for transients that are more difficult to implement. The transient discussion will also delve into signals that are high power in a very short time. Also included: a description of emission and immunity test sites, the sites that are becoming popular and their validation requirements, as well as an overview of test setups in these facilities.

PLANNED SPEAKERS & TOPICS

Use of Basic Measurement Facilities, Methods and Associated Error
Dave Arnett
Garmin International Inc, USA

CISPR 32 Edition 2, Amendment 1
Dave Arnett
Garmin International Inc, USA

Performing Immunity Testing to Transient Signals
Tom Braxton
TEB EMC-EMI Consulting LLC, USA

Continuous Wave Immunity
Ross Carlton
Gibbs and Cox Inc, USA

High Power Electromagnetics Test Facilities and Measurement Methods
William A. Radasky
Metatech Corporation, USA

Photo by Karthik Vepuri

The following information is preliminary and subject to change.

WT_A5 WORKSHOP

ADVANCED EMI TROUBLESHOOTING TECHNIQUES

8:30 AM - 5:00 PM

Room: Coronado B

Chair:
Min Zhang, *Mach One Design EMC*
Co-Chair:
Kenneth Wyatt, *Wyatt Technical Services LLC*

ABSTRACT:

When facing EMC test failures, design engineers are often required to diagnose and troubleshoot EMI issues quickly and effectively. Without a solid understanding of EMC fundamentals, however, EMI troubleshooting can become a daunting and time-consuming task. Historically, the specialised equipment needed for this work demanded significant financial investment—manageable for large, established companies but often prohibitive for small or early-stage startups.

Recent advances in test and diagnostic technologies have changed this landscape. Engineers can now access highly capable troubleshooting tools at much lower cost, making effective EMI diagnostics more accessible than ever. Yet, the core challenge remains: How do we troubleshoot EMI efficiently? In other words, how do we rapidly identify the root cause of emissions, or pinpoint weaknesses that lead to immunity and susceptibility failures?

This workshop brings together leading global experts to present advanced, practical, and field-proven EMI troubleshooting techniques applicable to emissions, immunity/susceptibility, and transient issues. Attendees will gain valuable hands-on insights, including:

Approaches for quickly identifying noise sources:

- Practical diagnostic workflows
- Techniques for low-noise design and noise mitigation
- Troubleshooting methods applicable to PCBs, cables, enclosures, and large systems

These techniques are novel, unique, and validated through years of real-world engineering work by recognised specialists. Whether you work in commercial, industrial, medical, defence, or space electronics, you will find the methods presented in this workshop directly applicable and highly impactful.

PLANNED SPEAKERS & TOPICS

Workshop Quick Introduction (the Theme & Presenters) [10 min]
Min Zhang
Mach One Design EMC, United Kingdom

You Are Failing EMC Tests, But Are You Testing the Right Thing, the Right Way? [45 min]
Karen Burnham
EMC United Inc, USA

A Three-Step Process for Radiated Emission Troubleshooting Success [60 min]
Kenneth Wyatt
Wyatt Technical Services LLC, USA

Troubleshooting EMI in Power Electronics: From Sub-100 W to Multi-Megawatt Systems [60 min]
Min Zhang
Newcastle University, United Kingdom

Black Box DUT: How to Solve the Problem of Unknown Disturbance Paths During Immunity Tests [60 min]
Konstantin Uhle-Wettler
Langer EMV-Technik GmbH, Germany

Troubleshooting Radiated Immunity and ESD Issues with Simple Bench-Level Tests [60 min]
Kenneth Wyatt
Wyatt Technical Services LLC, USA

Was That a Useful Modification? A Powerful Strategy for Quickly Evaluating the Effectiveness of Countermeasures During Immunity Tests [30 min]
Konstantin Uhle-Wettler
Langer EMV-Technik GmbH, Germany

Troubleshooting EMI in the Time Domain [60 min]
Min Zhang
Newcastle University, United Kingdom

Photo by Richard Georgerian

The following information is preliminary and subject to change.

WT_A6 TUTORIAL

APPLICATION OF REVERB CHAMBERS

1:30 PM - 5:00 PM

Room: Cortez B

Chair:
Vignesh Rajamani, *Rohde & Schwarz USA, Inc.*

ABSTRACT:

This tutorial will provide an introduction to recent applications of reverberation chambers. It is intended to provide EMC engineers who are interested in applying reverberation chambers to various measurement issues and the extension of reverberation chambers to solve a variety of EMC problems.

This half-day tutorial provides a brief overview of Reverb Chamber (RC) theory, followed by recent applications of RCs. The tutorial material will be updated to reflect recent research results and implications. The format will be a conference presentation style (lecture) followed by questions moderated by the chairman. It is designed for both academics and people from industry who will be involved in radiated emission or immunity testing of commercial or military systems using reverberation chambers and will be valuable to personnel evaluating the use of reverberation chambers as a complement to or replacement for other types of radiated test facilities and for personnel who are trying to use statistical methods to characterize the electromagnetic environments.

PLANNED SPEAKERS & TOPICS

Overview of Reverberation Chamber Theory and RC Statistics
Chuck Bunting
Oklahoma State University, USA

Standards Testing in Reverberation Chamber
Vignesh Rajamani
Rohde & Schwarz, USA

History of the Below-Deck EME Characterizations, and How it is Addressed in the MIL-STD's.
Carl Hager
NSWC Dahlgren, USA

Understanding the Highly Optimized Reverb Test Process
Garth D'Abreu
ETS-Lindgren, USA

Radiated Emission Measurements Below Noise Using a Reverberation Chamber
Frank Leferink
Universiteit Twente Faculteit Elektrotechniek Wiskunde en Informatica, Netherlands

The following information is preliminary and subject to change.

WT_D1 TUTORIAL

EMC IN POWER ELECTRONICS

8:30 AM - 12:00 PM

Room: Cortez C

Chair:
Vignesh Rajamani, *Rohde & Schwarz USA, Inc.*
Co-Chair:
Niek Moonen, *Universiteit Twente*

ABSTRACT:

As SiC and GaN devices become increasingly prevalent in modern electronics, their fast-switching behavior introduces new electromagnetic compatibility (EMC) challenges at both inter- and intra-system levels. Beyond adhering to design rules, there is a growing need to investigate and understand the resulting electromagnetic interference (EMI). This workshop equips participants with the knowledge to link design choices to their EMI impact and to select appropriate measurement instruments and accessories for effective EMI analysis and qualification of power electronic devices and circuits.

PLANNED SPEAKERS & TOPICS

Introduction to EMC in Power Electronics and EMI Mitigation
Niek Moonen
Universiteit Twente, Netherlands

Noise Source Identification in Power Electronics Using EMI Measurement Tools
Patrick Mayer
Rohde & Schwarz, Germany

Addressing PDN Noise and Stability Challenges with Oscilloscope-Based Impedance Analysis
Michael Schnecker
Rohde & Schwarz, USA

"Measurement Driven EMI Mitigation: From Diagnosis to Verified Solutions"
Vidal Gonzalez
Wurth Elektronik eiSos GmbH & Co KG, Germany

Photo by Richard Georgerian

The following information is preliminary and subject to change.

WT_M1 TUTORIAL

MILITARY EMC

8:30 AM - 5:00 PM

Room: Cortez A

Sponsored by TC-3 Electromagnetic Environment

Chair:
Carl Hager, *NSWC Dahlgren*
Co-Chair:
Finbarr O'Connor, *Huntington Ingalls Industries Inc*

ABSTRACT:

Achieving electromagnetic compatibility with military equipment, systems, and platforms requires significant expertise and effort. EMC must be considered at all lifecycle stages and involves first characterizing the operational electromagnetic environment (EME), then design/testing military systems at various stages of production, assembly and integration and coordination of Spectrum in operational environments. Numerous Military EMC standards and handbooks have been developed for electromagnetic environmental effects (E3) measurements and analysis to reduce the risk of equipment and systems failing to meet their operational performance requirements due to detrimental E3. The tutorial will focus on various considerations for Military EMC applications including Electromagnetic Interference (EMI), Electrostatic Discharge (ESD), Hazards of Electromagnetic Radiation to Ordnance (HERO), Electromagnetic Pulse (EMP), Lighting, Spectrum Sharing, etc.

The objective of this tutorial is to enhance our attendees' knowledge and understanding of key aspects of Military EMC that will help them in the performance of their jobs. The tutorial will cover a broad range of Military EMC topics. The first half of the morning session will consist of three requirements-based presentations, and the afternoon session consists of four EMC Testing and Measurements topics.

PLANNED SPEAKERS & TOPICS

Recent Updates to MIL-STD-461, Revision H
Finbarr O'Connor[1], Phillip Melton[2]
[1]Huntington Ingalls Industries Inc, USA; [2]Naval Surface Warfare Center, USA

History of Requirements Derivation for ESD
Phillip Melton
Naval Surface Warfare Center, USA

A New Standard for Military Aircraft Components Lightning Direct Effect Qualification
Frederick W. Heather
IEEE (Retired US Navy), USA

Preparing and Executing a Successful E3 Qualification Test Program
Mark Waller, Landon R. Carroll
Redstone Arsenal, USA

Hardware vs. Software: Optimizing Integration Methodologies for Electromagnetic Pulse (EMP) Field Measurements
Tiffany Morisak
US Navy Integrated Battlespace Simulation and Test Department (IBST), USA

Review of Near Strike Lightning Electric Field Requirements in MIL-STD-464D: Part 2
Tiffany Morisak[2], Brad Sheets[1]
[1]US Navy Integrated Battlespace Simulation and Test Department (IBST), USA; [2]Naval Air Systems Command, USA

Accurately Determining the CCF for Aircraft Reverberation EME Using Measurement Uncertainty Analysis
Kin Sze
Quality Engineering Test Establishment (QETE), Canada

Speed-up, and Increase Quality (Reproducibility), of your EMI Measurements Drastically Using Reverberation Chambers
Frank Leferink
University of Twente, Netherlands

Filters for use in Military & Space Applications
Randy J. Jost
Utah State University, USA

Spectrum Sharing and System Spectral Efficiency Considerations
Sarah Seguin
The Aerospace Corporation Chantilly, USA

The following information is preliminary and subject to change.

WT_M4 WORKSHOP

BUILDING ENGINEERING INSTINCT: TECHNICAL JUDGMENT, COMMUNICATION, AND CAREER STRATEGY

8:30 AM - 5:00 PM

Room: Coronado D

Chair:
Phillip Miller, *RATLR*
Co-Chair:
Nika Amralah, *Department of National Defence*

ABSTRACT:

The purpose of this workshop is to present tools, skills, and techniques useful to Early Career Engineers, Engineers early in their EMC careers, and Engineers seeking to accelerate their career advancement. This workshop will share best practices for tailoring requirements to projects, building capabilities for an effective EMC test laboratory, improving communication, leadership, and career ownership. Join us to learn how to realize the career you've always wanted as the engineer you've always wanted to be!

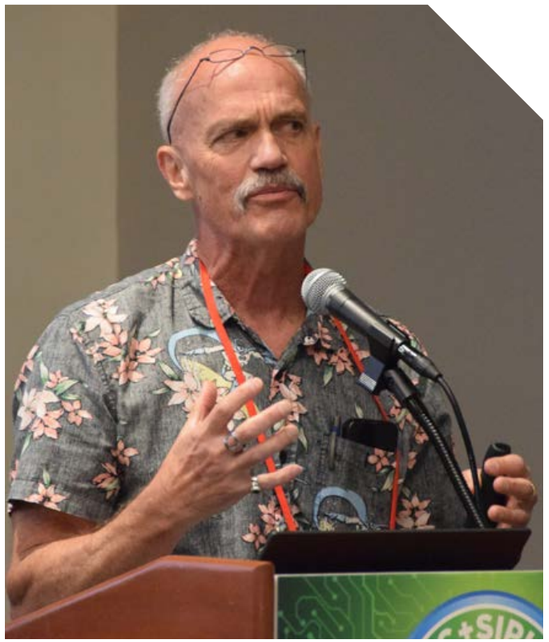


Photo by Richard Georgerian

PLANNED SPEAKERS & TOPICS

Why EMC is important in the design process
Bob Scully
NASA, USA

How to Tailor EMC Test Requirements for Optimal Results
Gregory Hiltz
Quality Engineering Test Establishment, Canada

DIY EMI Lab: Building Your In-House Test Capabilities
Manuel Martin Soriano
Anduril Industries, USA

Becoming An Internal EMC Consultant Within A Large Company
Jim Lukash
Lockheed Martin Space Systems, USA

How To Give Effective Presentations
John C. McCloskey
EMC-Closkey, USA

Getting Published: Self and Industry Publication Secrets for Profit and Standing
Kenneth Wyatt
Wyatt Technical Services LLC, USA

Effective Influencing: Achieving Career Goals Without Authority
Phillip Miller
RATLR, USA

Directing Your EMC Career: Making Deliberate Career Choices
Nika Amralah
Department of National Defence of Canada, Canada

Affability of E3 Engineers - Managing Multiple Stakeholders with Technical Detail and Understanding Skillsets
Dean F. Landers
Amplifier Research, USA

Knowledge Transfer Methods
Stephanie Zajac
Johns Hopkins University Applied Physics Laboratory, USA

The following information is preliminary and subject to change.

WT_S1 WORKSHOP

GLOBAL EMC REGULATIONS AND STANDARDS

8:30 AM - 5:00 PM

Room: Coronado C

Sponsored by TC-1 EMC Management

Chair:
Henry Benitez, *University of Portland College of Arts and Sciences*

ABSTRACT:

This workshop will address global electromagnetic regulations, standards, and product compliance activities. Representatives and experts will present on topics to include the FCC, TCB's, FDA, NIST MRA's and Lab Accreditations. Standards representatives and experts will discuss standards to include CISPR, IEC, ANSI, IEEE and others pertinent for product EMC compliance.

Photo by Richard Georgerian

PLANNED SPEAKERS & TOPICS

Introduction to the World of EMC Standards and Regulations
Henry Benitez
IEEE, USA

FCC EMC Compliance and Radio Certifications
Bob DeLisi[2], William H. Graff[1]
[1]Mesa Community College, USA; [2]UL LLC, USA

CISPR Standards: CISPR A/CISPR H CISPR I – CISPR 32/35
Andy Griffin
Cisco Systems Inc, USA

Automotive Standards Development by CISPR/D Review of CISPR 12, CISPR 36, and CISPR 25
Craig Fanning
Elite Electronic Engineering, Inc., USA

Overhaul of ANSI C63.9 Standard for Laboratory Immunity Test of Multimedia Equipment Exposed to RF Sources
Nick Garinger
Intel Corporation, USA

IEEE EMCS Standards
Karen Burnham
EMC United, USA

Overview of ACEC
Bob Mitchell
TUV Rheinland AG, Germany

Roles of EMC Standards in Medical Device Evaluation
Yasaman Ardeshirpour
US Food and Drug Administration, USA

Role of Accreditation Bodies, Accreditation Challenges and Common Deficiencies
Megan McConnell[2], Randy Long[1], Janneth Marcelo[3], Amanda McDonald[3]
[1]ANSI National Accreditation Board, USA; [2]American Association for Laboratory Accreditation, USA; [3]National Institute of Standards and Technology, USA

The following information is preliminary and subject to change.

WT_S3 WORKSHOP

CHARACTERIZATION OF SHIELDING CCA FROM DC TO 40GHZ: THE NEW STANDARD & WHAT'S NEXT?

8:30 AM - 12:00 PM

Room: Cortez B

Sponsored by TC-1 EMC Management

Chair:
Charles Jullien, *Safran Electrical and Power*
Co-Chair:
Huadong Li, *Molex LLC*

ABSTRACT:

This workshop will present the upcoming P2855 standard for characterizing the shielding effectiveness of cable/connector assemblies from DC to 40 GHz. This standard proposes recommended measurement techniques for evaluating and specifying the shielding effectiveness of cable/connector assemblies to control electromagnetic interference (EMI). It thus enables product compliance with current government, regulatory, and customer requirements and ensures the electromagnetic compatibility (EMC) of the system. The standard also provides measurement techniques for evaluating and specifying the shielding capabilities of cable/connector assemblies to reduce electromagnetic energy coupling between these assemblies. Emphasis is placed on measurement techniques already incorporated into, or widely used in, commercial and military standards. A set of new methods to be incorporated into the standard will be presented. The first workshop is divided into topics such as magnetic shielding methods. A second speaker addresses the follow-up to this work and ideas for extending the methods along innovative paths such as the integration of environmental constraints or contact resistances in connectors.

The workshop is divided into topics as: Magnetic shield method, DC method, Triaxial method, Injection line method, Parallel plate method, Localized injection method, Anechoic chamber method, G-TEM cell method, Reverberation chamber, Shielding Effectiveness Measurands, Environnemental testing.

The workshop will help the audience to properly test and design cables, connectors and their assemblies for product EMC.

PLANNED SPEAKERS & TOPICS

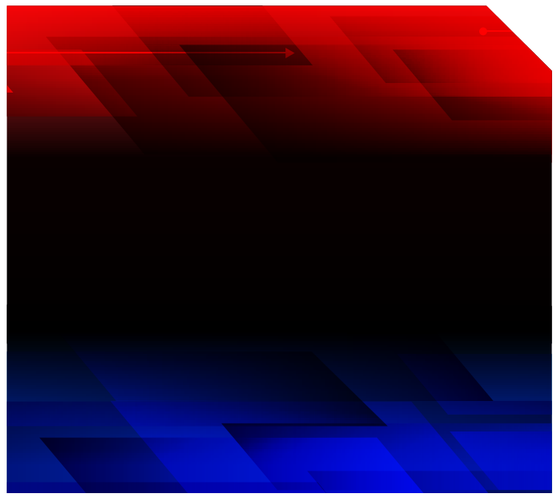
Introduction to P2855 Standard : Recommended Practices for the Electromagnetic Characterization of Cable/Connector Assembly Shielding Effectiveness in Frequency Range of Direct Current to 40 GHz
Charles Jullien[1], Huadong Li[2]
[1]*Safran Electrical and Power, France;* [2]*Molex LLC, USA*

Shielding Effectiveness Parameters Measured with the Triaxial Method
Huadong Li
Molex LLC, USA

Environmental Influence on the Measurement of Transfer Impedance
Charles Jullien, Thomas Colleter
Safran Electrical and Power, France

Triaxial Method for Transfer Impedance Measurements on Shielded FlexPCBs
Jesper Lansink Rotgerink, Jaco Verpoorte
NLR, Netherlands

Practical Methods to Design, Simulate, and Measure Magnetic Shielding for Connectors and Interconnect Assemblies in Low Intensity Magnetic Fields
Eugene Mayevskiy
Rohde & Schwarz, USA



The following information is preliminary and subject to change.

WT_V2 TUTORIAL

EMC IMPLICATIONS IN MANNED AND UNMANNED VEHICLES - AUTONOMY IN AUTOMOTIVE AND OTHER INDUSTRIES

1:30 PM - 5:00 PM

Room: Cortez C

Chair:
Garth D'Abreu, *ETS-Lindgren*
Co-Chair:
Robert Kado, *Stellantis US*
Craig Fanning, *Elite Electronic Engineering, Inc.*

ABSTRACT:

Global electric vehicle (EV) sales continues its upward trend with regional differences in growth rate across Asia, Europe, and the Americas, and as manufacturers continue to develop the advanced features that we have all become accustomed to, the challenges for the EMC test engineers remain as prevalent as ever. Advanced driver assistance systems (ADAS), automated driving systems (ADS) and autonomy are terms synonymous with sophisticated levels of sensor integration and computer control in the automotive industry, but many of these features are common to other vehicles under the classifications of drones, electric vertical takeoff and landing (eVTOL) vehicles, and others that have become increasingly popular. Although there are new standards and guidance documents published and others in development to help users navigate the increasingly extensive test scope associated with the broad umbrella of vehicles, some serve a regulatory purpose, and others introduce initiatives to help improve the reliability and efficiency of tests, applicable across multiple platforms.

In this tutorial, speakers will provide an update on the latest development in the automotive EMC standards, look at other standards and their use for other types of vehicles, and discuss options and other initiatives under consideration. We will also hear from manufacturers on the challenges that they face, and solutions that test equipment manufacturers are working on to help manufacturers meet their performance goals.

Our speakers have extensive experience in automotive EMC/RF/Wireless design and test, with some active technical contributors to international standards committees including IEEE, ISO, SAE, and CISPR.

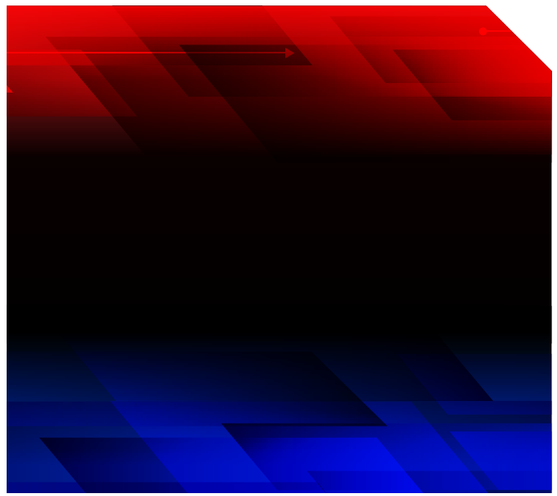
PLANNED SPEAKERS & TOPICS

EMC Standards and ADAS Applications
Craig Fanning
Elite Electronic Engineering, Inc., USA

EMC Test Challenges Across Different Vehicle Platforms
Garth D'Abreu
ETS-Lindgren, USA

Vehicle In the Loop: Testing for FMVSS 127
John Gagnon
dSPACE, USA

SEED/ESD Simulations for Modern ADAS Interfaces
Andreas Hardock
Nexperia, Germany



The following information is preliminary and subject to change.

SC3_1 TECHNICAL PAPERS

MACHINE LEARNING FOR ADVANCED SIGNAL INTEGRITY AND POWER INTEGRITY (I)

10:30 AM - 12:00 PM

Room: Coronado C

Sponsored by SC-3 Machine Learning and Artificial Intelligence in EMC and SIPI

Chair:
Lijun Jiang, *Missouri University of Science and Technology*
Co-Chair:
Alistair Duffy, *De Montfort University*

ABSTRACT:

This session highlights simulation and design methodologies for system-level EMC with strong emphasis on measurement correlation. Contributions include domain decomposition techniques for large-scale systems, virtual twin frameworks aligned with IEC standards, and SIPI-based modeling of stray current effects in high-power racks. The session bridges simulation and real-world validation for compliance-driven design.

PLANNED SPEAKERS & TOPICS

EMC Modeling of Modular Multi Level HVDC Converters using Domain Decomposition
Fernando Rodriguez Varela[1], Arne Schröder[1], Gustaf Sandberg[2]
1Hitachi Energy Switzerland Ltd, Switzerland; [2]Hitachi Energy Sweden AB, Sweden

A Computational Electromagnetics Based Virtual Twin Framework for IEC Consistent EMC Assessment of High-Speed Interconnects
Safal Sharma
Molex LLC, USA

High-Power Rack Stray Currents: EMC Exposure Quantified Through SIPI Modeling
Mehdi Mechaik, Sajjad Ahmed
TE Connectivity Corporation, USA

Photo by Richard Georgerian

The following information is preliminary and subject to change.

SC3_2 TECHNICAL PAPERS

MACHINE LEARNING FOR ADVANCED SIGNAL INTEGRITY AND POWER INTEGRITY (II)

1:30 PM - 3:00 PM

Room: Coronado C

Sponsored by SC-3 Machine Learning and Artificial Intelligence in EMC and SIPI

Chair:
Alistair Duffy, *De Montfort University*
Co-Chair:
Hanzhi Ma, *Zhejiang University*

PLANNED SPEAKERS & TOPICS

Imitation Learning-based Routing Optimization for Chiplet Interconnects in Advanced System-in-Package(SiP)
Hyunwoo Kim, Seunghun Ryu, Dongryul Park, Sanguk Lee, Seonghi Lee, Seungyoung Ahn
Korea Advanced Institute of Science and Technology, Korea (the Republic of)

Differential Via Modeling using Transfer Learning Framework
Shruti Sawant[1], Mehdi Mousavi[2], Davit Kharshiladze[1], Srinath Penugonda[3], Sathvika Bandi[4], Manish K. Mathew[2], Kevin Cai[5], Shameem Ahmed[3], Bichen Chen[6], Granthana Rangaswamy[6], Santosh Pappu[6], Lijun Jiang[7], Chulsoon Hwang[8]
[1]Missouri University of Science and Technology, USA; [2]Missouri University of Science and Technology, USA; [3]Cisco Systems Inc, USA; [4]Missouri University of Science and Technology, USA; [5]Cisco Systems, Inc, USA; [6]Facebook Inc, USA; [7]Missouri University of Science and Technology, USA; [8]Missouri University of Science and Technology, USA

Surrogate-Assisted Amortized Neural Optimization of DDR5 Decision Feedback Equalization
Julian Withöft[1], Werner John[1,2], Emre Ecik[1], Ralf Brüning[3], Jürgen Götze[1]
[1]Technische Universitat Dortmund, Germany; [2]Pyramide2525, Germany; [3]Zuken GmbH, Germany

The following information is preliminary and subject to change.

SC3_3 TECHNICAL PAPERS

MACHINE LEARNING FOR ADVANCED SIGNAL INTEGRITY AND POWER INTEGRITY (III)

3:30 PM - 5:00 PM

Room: Coronado C

Sponsored by SC-3 Machine Learning and Artificial Intelligence in EMC and SIPI

Chair:
Alistair Duffy, *De Montfort University*
Co-Chair:
Vladimir Okhmatovski, *University of Manitoba*

PLANNED SPEAKERS & TOPICS

Multimodal Diagnosis for Automotive Wire Harnesses With Varying Wire Counts
Shiyan Liu[2], Tadatoshi Sekine[1]
[1]Shizuoka University, Japan; [2]Shizuoka University, Japan

Working Volume Equivalence in Source-Stirred Reverberation Chambers via Sensitivity Maps
Anett Kenderes[1], Péter Tamás Benko[2], Szabolcs Gyimóthy[1]
[1]Budapesti Muszaki es Gazdasagtudomanyi Egyetem, Hungary; [2]Mobility Electronics/Electromagnetic

Compatibility (ME/EMC5) Robert Bosch Kft., Hungary Output Space Filling and Time Series Model for Prediction of EMI Filter Attenuation Spectrum
Masahiro Yoshida, Ryo Maekawa, Koichi Takeuchi, Yoshitaka Toyota
Okayama Daigaku, Japan

DALLAS FUN FACTS

FAMOUS TEXAS BBQ

BBQ has been a staple in Texas since the beef industry boomed after the Civil War in 1866. Between 1866 and 1885, approximately 10 million Texas longhorns were shipped to Chicago to serve the growing meat industry. Thanks to Spanish, German, Czech, and Polish influence, BBQ evolved from multiple practices such as smoking meat for preservation, sausage processing, and cooking on a grill over a charcoal pit.

Popularization of BBQ has grown all over the U.S. and the world, not only for preservation, but for flavor. Every region of Texas has its own style and favorite way to prepare BBQ. Dallas specifically has its own technique which blends Central Texas and East Texas methods. Try regional cuisine such as brisket candy and Texas Twinkies. Good BBQ is a measure of true Texas Pride!

The following information is preliminary and subject to change.

SPS1_12 SPECIAL SESSION

ELECTROMAGNETIC COMPATIBILITY CHALLENGES AND SAFETY OF MEDICAL DEVICES IN CLINICAL ENVIRONMENTS

1:30 PM - 5:00 PM

Room: Coronado B

Chair:
Ji Chen, *University of Houston*
Co-Chair:
Ananda Kumar, *US Food and Drug Administration*

ABSTRACT:

The increasing complexity of medical devices and their widespread use in electromagnetically challenging clinical environments—such as MRI suites, operating rooms, and intensive care units—raise critical electromagnetic compatibility (EMC) and safety concerns. This Special Session focuses on emerging EMC challenges for medical devices, including susceptibility to electromagnetic fields, unintended coupling mechanisms, device–tissue interactions, and risk mitigation strategies. The session aims to bring together researchers, clinicians, device manufacturers, and regulatory experts to discuss recent advances in modeling, testing, and standards development related to medical device EMC. Topics will include both experimental and computational approaches, realworld incident analyses, and regulatory perspectives to ensure safe and reliable device operation in clinical settings.

PLANNED SPEAKERS & TOPICS

Evaluation of B1+ Field Perturbations By Medical Implants Across Anatomical Regions
Xiaotian Wang, Jiarui Lu, Zhongrui Wang, Jianfeng Zheng
University of Houston, USA

Magnetic Resonance Imaging: a challenging EMC environment for Active Implantable Medical Devices
Michael Steckner
MKS Consulting, USA

Deep Learning-Based Prediction of Implant-Induced pSAR1g Using Canonicalized |B1+| and Tissue Property Volumes
Jiarui Lu, Zhongrui Wang, Xiaotian Wang, Jianfeng Zheng
University of Houston Cullen College of Engineering, USA

Effect of Electrode Geometry on Proximity Enhancement of Electrically Long AIMDs
Krishna K. Kurpad, Paul S. Stadnik, Jeffrey A. Von Arx
Micro Systems Engineering Inc, USA

Effect of Feedthrough Wire Impedance in Transfer Function Model in MR Safety
Hongbae Jeong, Joshua Guag, Ananda Kumar
US Food and Drug Administration, USA

Comparison of Computational Methods for EM Safety Assessment of MRI
Ananda Kumar[1], Luisa Fleig[2], Tolga Goren[2], Hongbae Jeong[1]
[1]US Food and Drug Administration, USA; [2]IT'IS Foundation, Switzerland

The following information is preliminary and subject to change.

SPS2_12 SPECIAL SESSION

AI AGENTS AND GENERATIVE TOOLS FOR EMC AND SIPI APPLICATIONS

10:30 AM - 12:00 PM
Room: Coronado B

Chair:
Karol Niewiadomski, *Universiteit Twente*
Co-Chair:
Hanzhi Ma, *Zhejiang University*
Ling Zhang, *Zhejiang University*

ABSTRACT:

Electromagnetic Compatibility (EMC) and Signal/Power Integrity (SIPI) engineering face increasingly complex challenges as modern electronic systems operate at higher frequencies, integrate greater component densities, and demand enhanced performance within stringent regulatory frameworks. Traditional design methodologies and problem-solving approaches, while foundational, often require extensive computational resources, specialized expertise, and iterative processes that can significantly extend development cycles.

The emergence of artificial intelligence agents and generative AI tools presents unprecedented opportunities to revolutionize EMC/SIPI engineering practices. AI agents capable of autonomous decision-making and adaptive learning can streamline complex electromagnetic modeling, optimize design parameters, and predict interference patterns with remarkable efficiency. Generative AI technologies, including large language models and machine learning-based design tools, offer novel approaches to circuit layout optimization, filter design, shielding strategies, and regulatory compliance verification.

This special session will explore the transformative potential of AI-driven methodologies in addressing critical EMC/SIPI challenges. Topics of discussion will encompass the application of AI agents for automated electromagnetic simulation workflows, generative algorithms for optimal PCB routing and component placement, machine learning approaches to EMI/EMC prediction and mitigation, and intelligent design tools for signal/power integrity optimization. Additionally, the session will examine practical implementation strategies, validation methodologies, and the integration of AI tools within existing EMC/SIPI design environments.

PLANNED SPEAKERS & TOPICS

Benchmarking Closed-Weight LLMs on EMC Topics
Karol Niewiadomski, Lorenzo Barsotti, Niek Moonen
Universiteit Twente, Netherlands

Autonomous Convergence Assessment of Computational Electromagnetics Using FSV (Feature Selective Validation)
Alistair Duffy
De Montfort University, United Kingdom

Photo by Richard Georgerian

The following information is preliminary and subject to change.

SPS3 SPECIAL SESSION

ELECTROMAGNETIC INFORMATION SECURITY AGAINST LEAKAGE AND INTERFERENCE THREATS

1:30 PM - 5:00 PM
Room: De Lasalle

Chair:
Yuichi Hayashi
Co-Chair:
Michael McInerney, *Consultant*

ABSTRACT:

As electronic devices become integral to critical infrastructure and daily life, ensuring physical layer security is paramount. This special session addresses the dual challenges of electromagnetic information security, specifically focusing on threats from passive information leakage and active electromagnetic interference. While advances in signal processing have refined leakage analysis, they have also enabled more precise injection and interference attacks. This session aims to bridge the gap between conventional EMC engineering and cybersecurity by exploring how electromagnetic emissions and interference characteristics can be exploited for attacks or utilized for defense. We will discuss cutting-edge research including advanced techniques for information reconstruction, sophisticated active electromagnetic injection attacks, novel methods for hardware assurance, and the integration of AI technology in electromagnetic security. The session brings together experts to define the forefront of evaluating risks and developing countermeasures against these evolving electromagnetic threats.

PLANNED SPEAKERS & TOPICS

Introduction to Electromagnetic Information Security Against Leakage and Interference Threats
Yuichi Hayashi1, William A. Radasky2
1Nara Sentan Kagaku Gijutsu Daigakuin Daigaku Joho Kagaku Kenkyuka, Japan; 2Metatech Corporation, USA

Fundamental Study of Two-Stage Demodulation for Audio Recovery from EM Leakage of Class-D Amplifiers
Satoshi Oda, Taiki Kitazawa, Yuichi Hayashi
Nara Sentan Kagaku Gijutsu Daigakuin Daigaku, Japan

Anti-TEMPEST for TMDS via Correlation-Minimized Readability-Preserving Bounded Color Perturbation
Jinhyeong Kim, Cheolheon Bae, DongWoo Kang, Taesik Nam, Changhoon Lee, Jong-Gwan Yook
Yonsei University, Korea (the Republic of)

Joint Amplitude and Phase Analysis for Enhanced Key Recovery in Active Electromagnetic Analysis
Taiki Kitazawa, Daisuke Fujimoto, Yuichi Hayashi
Nara Institute of Science and Technology (NAIST), Japan

ARARE: An Evaluation Board for Detecting Abnormal Aging Characteristics Using Electromagnetic Backscatter in I/O Circuits
Shugo Kaji, Daisuke Fujimoto, Yuichi Hayashi
Nara Institute of Science and Technology (NAIST), Japan

Pin-Selective Contactless Data Injection into Multi-Line CMOS Interfaces using Dual-Wave IEMI
Masahiro Kinugawa[1], Yuichi Hayashi[2]
[1]Fukuchiyama Koritsu Daigaku, Japan; [2]Nara Sentan Kagaku Gijutsu Daigakuin Daigaku Joho Kagaku Kenkyuka, Japan

The following information is preliminary and subject to change.

TC10_1 TECHNICAL PAPERS

HIGH-SPEED INTERCONNECTS & SERDES (224/448 GBPS)

10:30 AM - 12:00 PM

Room: Cortez B

Chair:
Tao Wang, *DIS Tech*
Co-Chair:
Matteo Cocchini, *International Business Machines Corp*

PLANNED SPEAKERS & TOPICS

224 Gpbs End-to-End Channel Optimization for High-Performance Computing System
Wenchang Huang[1], Siqi Bai[2], Ryan Hou[2], Shengxuan Xia[2], Songping Wu[3], Chulsoon Hwang[4]
[1]Missouri University of Science and Technology, USA; [2]Rivos Inc, USA; [3]Rivos Inc., USA; [4]Missouri University of Science and Technology, USA

Ultra-Wideband Coplanar Stripline (CPS) Interconnects for 224/448-Gbps SerDes: Design and mm-Wave Performance Analysis
Kang Wook Kim[1], Byung Cheol Min[1], Dong Jae Go[1], Mun Ju Kim[1], Abhijit Wander[2], Raheeq Darweesh[2]
[1]Kyungpook National University, Korea (the Republic of); [2]Amphenol FCI Connectors Singapore Pte Ltd, Singapore

Design and Analysis of Signal and Power Integrity in Chiplet Interface Channels for 1317 GB/s/mm Die-Edge Bandwidth
Jiwoon Moon[1], Jonghyeon Lee[1], Yuchul Jung[1], Uichan Kim[1], Taei Kim[1], Jimin Kwon[3], Youngwoo Kim[2]
[1]Sejong University, Korea (the Republic of); [2]Sejong University, Korea (the Republic of); [3]Korea Advanced Institute of Science and Technology, Korea (the Republic of)

The following information is preliminary and subject to change.

TC10_10 TECHNICAL PAPERS

MATERIAL PROPERTY EXTRACTION

1:30 PM - 3:00 PM

Room: Cortez A

Sponsored by TC-10 Signal and Power Integrity

Chair:
Tao Wang, *DIS Tech*
Co-Chair:
Chulsoon Hwang, *Missouri University of Science and Technology*

PLANNED SPEAKERS & TOPICS

Extraction of Surface Roughness and Dielectric Properties for High-Speed Digital Channels using Bayesian Optimization
Seungtaek Jeong, Hanfeng Wang
Google LLC, USA

Inconsistency between Existing Common Dielectric Models and Measured Values
Chun-Che Huang, Chiu-Chih Chou
National Central University, Taiwan

Multimode Dielectric Characterization of a Cooling Liquid Using a Cylindrical Cavity Resonator
Mehdi Mousavi[1], Chaofeng Li[7], Reza Asadi[2], Yejun Kim[3], Xiaoning Ye[4], DongHyun (Bill) Kim[5], Lijun Jiang[6], Victor Khilkevich[1]
[1]Missouri University of Science and Technology, USA; [2]Missouri University of Science and Technology, USA; [3]Missouri University of Science and Technology, USA; [4]Intel Corp, Hillsboro, OR, USA; [5]Missouri University of Science and Technology College of Engineering and Computing, USA; [6]Missouri University of Science and Technology, USA; [7]Qualcomm Inc, USA

DALLAS FUN FACTS

TEXAS STATE FLOWER:
THE BLUEBONNET

The bluebonnet is the official flower of Texas and was adopted by the Texas state legislature in 1901. The vibrant sapphire blue petals are said to resemble the bonnets worn by pioneer women to shield them from the sun.

Bluebonnets typically germinate in the fall and then peak in mid to late April and can often be seen blooming in fields and roadsides throughout central and south Texas. They are not hard to spot as their centers typically have while or yellow spikes and the flower can grow to around 1 foot tall.

The origins of the Bluebonnet is chalked full of myths, legends, and quirky stories, but the flower remains one of the most beloved and recognizable symbols of the great state of Texas. The plants determination to come back, year after year, despite soil and weather conditions, is symbolic of the resilient people who call Texas their home.

The following information is preliminary and subject to change.

TC10_11 TECHNICAL PAPERS

COUPLING, CROSSTALK & BOUNDARY CONDITIONS

3:30 PM - 5:00 PM

Room: Cortez A

Sponsored by TC-10 Signal and Power Integrity

Co-Chairs:

Daniel Commerou, *Missouri University of Science and Technology*
Seungtaek Jeong, *Google LLC*

PLANNED SPEAKERS & TOPICS

Crosstalk Sensitivity to Power Plane Boundary Conditions and Via Configurations
Srinath Penugonda, David Nozadze, Kartheek Nalla, Amendra Koul, Mike Sapozhnikov
Cisco Systems, Inc., USA

An Empirical Method to Account for Fringing Capacitance in Parallel Plane Resonators
Cody J. Goins, Victor Khilkevich, Daryl Beetner
Missouri University of Science and Technology, USA

Statistical Analysis of Electromagnetic Coupling to PCB-Cable Assemblies in Complex Enclosures
Shen Lin, Ge Cao, Zhen Peng
University of Illinois at Urbana-Champaign, USA

The following information is preliminary and subject to change.

TC10_2 TECHNICAL PAPERS

DDR5 MEMORY SYSTEMS

1:30 PM - 3:00 PM

Room: Cortez B

Sponsored by TC-10 Signal and Power Integrity

Co-Chair:

Matteo Cocchini, *International Business Machines Corp*
Junyong Park, *Kyung Hee University*

PLANNED SPEAKERS & TOPICS

Novel Clock Signal Topology with Directional Coupler for DDR5 Memory Modules
Seungjin Lee, Jonghoon Kim, Sewoong Choi, Dongyeop Kim, Seongguk Kim, Yunho Lee, Kyoungsun Kim, Jeonghyeon Cho, Wonhwa Shin
Samsung Electronics Co Ltd, Korea (the Republic of)

DDR5 Simulation Correlation, and the Impact of Channel, Crosstalk, and DFE
Yuanhong Zhao, Kinger Cai, Mikael Rien, Javier DeLaCruz
Arm Ltd, USA

Signal Integrity Improvement of Command/Address Channels in DDR5 Fly-by Topology based on Intentional Characteristic Impedance Mismatch
Sungbum Kim, Siwook Park, Uichan Kim, Jonghyeon Lee, Yuchul Jung, Youngwoo Kim
Sejong University, Korea (the Republic of)

Photo by Richard Georgerian

The following information is preliminary and subject to change.

TC10_3 TECHNICAL PAPERS

ADVANCED PACKAGING & INTERPOSERS

3:30 PM - 5:00 PM

Room: Cortez B

Sponsored by TC-10 Signal and Power Integrity

Co-Chairs:
Giorgi Maghlakelidze, *NVIDIA Corp*
Chulsoon Hwang, *Missouri University of Science and Technology*

PLANNED SPEAKERS & TOPICS

Comparative Analysis of Organic Substrate and RDL Interposer for High-Speed D2D Interconnects
Junhyuk Cho, Chungju Kim, Taisik Yang, Yongseok Kang
LG Electronics Inc, Korea (the Republic of)

112-GHz Insertion-Loss Characterization and TGV Power-Delivery Analysis of a Glass-Core AI Server Package
Satoru Kuramochi
Dainippon Insatsu Kabushiki Kaisha, Japan

Signal Integrity Analysis of 64 Gb/s Chiplet Interconnections in Panel-Level RDL Interposers Considering Surface Roughness
Jonghyeon Lee[1], Jongseon Jeong[1], Jiwoon Moon[1], Yuchul Jung[1], Siwook Park[1], Jimin Kwon[2], Youngwoo Kim[1]
[1]Sejong University, Korea (the Republic of); [2]Korea Advanced Institute of Science and Technology, Korea (the Republic of)

The following information is preliminary and subject to change.

TC10_9 TECHNICAL PAPERS

S-PARAMETER & DATA VALIDATION

10:30 AM - 12:00 PM

Room: Cortez A

Sponsored by TC-10 Signal and Power Integrity

Co-Chair:
Giorgi Maghlakelidze, *NVIDIA Corp*
Hanfeng Wang, *Google Inc*

PLANNED SPEAKERS & TOPICS

Comparison of Numerical and Analytical Dispersion Relations with Subtractions for Sparse S-Parameters
Yu-Zhan Chen[2], Chiu-Chih Chou[1]
[1]National Central University, Taiwan; [2]National Central University, Taiwan

Evaluating the Quality of Computed TDR via High-to-Mid Frequency Data Comparison
Yu-Hua Chang[1], Chiu-Chih Chou[2]
[1]National Central University, Taiwan; [2]National Central University, Taiwan

Consistency Analysis of the IEEE 370 Preliminary Causality Metric Using Physics-Based Models
Hai-En Ma, Chiu-Chih Chou
National Central University, Taiwan

Photo by Karthik Vepuri

The following information is preliminary and subject to change.

TC11_1 TECHNICAL PAPERS

NANOTECHNOLOGY AND ADVANCED MATERIALS

3:30 PM - 5:00 PM

Room: Coronado D

Sponsored by TC-11 Nanotechnology and Advanced Materials

Chair:
Marina Koledintseva, *The Boeing Company, Saint Louis, MO*
Co-Chairs:
Alessandro Giuseppe D'Aloia, *DIAEE - Sapienza University of Rome*

PLANNED SPEAKERS & TOPICS

Investigation of a Material Design Methodology with Visualizing Target Properties Using Ultra-lightweight Electromagnetic Wave Absorbers
Dan Suzuki[1], Kishio Hidaka[1], Saijian Ajia[1], Eriko Kijima[2], Tomonaga Ueno[2], Motoshi Tanaka[3], Shotaro Takahashi[4], Yasushi Endo[1], Sho Muroga[1]
[1]Tohoku Daigaku Daigakuin Kogaku Kenkyuka Kogakubu, Japan; [2]Nagoya Daigaku, Japan; [3]Akita Daigaku, Japan; [4]Akita Daigaku, Japan

Effect of Raster Orientation on X-band Shielding Effectiveness of Aerosol Jet Printed Films
Cannon Kilcrease[1,2], Md Shihab Shakur[3], Srikanthan Ramesh[3], Chuck Bunting[1,2], Pavithrakrishnan Radhakrishnan[1,2]
[1]Oklahoma State University, USA; [2]Oklahoma State University, USA; [3]Oklahoma State university, USA

Inverse Design Method for Frequency Selective Surface Based on Physics-Informed Generative Models
Weikai Luo, Da Li, Jinyan Ma, ErPing Li
Zhejiang University, China

The following information is preliminary and subject to change.

TC11_2 TECHNICAL PAPERS

NANOTECHNOLOGY AND ADVANCED MATERIALS

1:30 PM - 3:00 PM

Room: Coronado D

Sponsored by TC-11 Nanotechnology and Advanced Materials

Chair:
Marina Koledintseva, *The Boeing Company, Saint Louis, MO*
Co-Chairs:
Alessandro Giuseppe D'Aloia, *DIAEE - Sapienza University of Rome*

PLANNED SPEAKERS & TOPICS

High-Speed Voltage Clamping by Granular Metals for Arrester Devices
Matthew Landi, Tyler Bowman, Matt Oliveira, Frank McKay, Simeon Gilbert, Laura Biedermann
Sandia National Laboratories, USA

Absorber Performance Measurements
Paul Dixon
Qnity Electronics, USA

Multi-scale Modeling for EMI Shielding in Polymer Composites
Parimal Maity, Shrish Patel, Rob Rhein, Karthik Venkatesan
Eaton Corporation, USA

Photo by Richard Georgerian

The following information is preliminary and subject to change.

TC1_1 TECHNICAL PAPERS

EMI: STANDARDS AND PROTECTION REQUIREMENTS

3:30 PM - 5:30 PM

Room: Coronado D

Sponsored by TC-1 EMC Management

Chair:

PLANNED SPEAKERS & TOPICS

High-Quality Substation's Design: The Protection from Electromagnetic Interference
Urban M. Peterlin
Elektroinstitut Milan Vidmar, Slovenia

ANSI C63.10 (1 -18 GHz) Direct Antenna Conducted Emissions Proficiency Testing Misclassification Issues: Causes and Cures
Harry H. Hodes, Din D. Ng
ACE-PT inc., USA

ANSI C63.4 (1 -18 GHz) Radiated Emissions Proficiency Testing Misclassification Issues: Causes and Cures
Harry H. Hodes, Din D. Ng
ACE-PT inc., USA

DALLAS FUN FACTS

A TRIBUTE TO JOHN F. KENNEDY

Located 2.5 miles from the Hilton Anatole in Dealey Plaza National Historic Landmark District is the Sixth Floor Museum, which chronicles John F. Kennedy's life and assassination. View the extensive collection of items related to Kennedy's assassination and 1960s culture, learn about the Texas School Book Depository building, and read the memory book with personal messages written by friends and family of JFK. In addition to the museum is the Memorial Plaza, an open tomb and sculpture which creates a special illusion to honor JFK.

The following information is preliminary and subject to change.

TC2_1 TECHNICAL PAPERS

EMC MEASUREMENTS - REVERBERATION CHAMBERS AND MATERIAL CHARACTERIZATION

10:30 AM - 12:00 PM

Room: Coronado A

Sponsored by TC-2 EMC Measurements

Chair:
Monrad Monsen, *Oracle*

PLANNED SPEAKERS & TOPICS

Statistics of Electromagnetic Fields within Complex Nested Cavities Coupled by Various Wires & Apertures
Marshall D. Sowell[1,2], Carl Hager[1,2]
[1]Naval Surface Warfare Center Dahlgren Division, USA; [2]NSWC Dahlgren, USA

Refined Maximum Power-Based Approach for EMI Measurements in Reverberation Chambers
Fushi Zhang[1,4], Vignesh Rajamani[2], Neelakantam Venkatarayalu[1], Jens Medler[3], Shuwen Li[4], Danny Bennett[2]
[1]Singapore Institute of Technology, Singapore; [2]Rohde & Schwarz USA, Inc., USA; [3]Rohde & Schwarz GmbH & Co. KG, Germany; [4]Rohde & Schwarz Asia Pte Ltd, Singapore

Broadband Characterization of Flexible Materials Using a Coaxial Structure
Joseph Stecher[1], Victor Khilkevich[1], Daniel L. Commerou[1], Xiaoning Ye[2]
[1]Missouri University of Science and Technology, USA; [2]Intel Corp, Hillsboro, OR, USA

The following information is preliminary and subject to change.

TC2_2 TECHNICAL PAPERS

EMC MEASUREMENTS - SHIELDING

3:30 PM - 5:30 PM

Room: Coronado A

Sponsored by TC-2 EMC Measurements

Chair:
Ross Carlton, *Gibbs and Cox Inc*
Co-Chair:
Monrad Monsen, Oracle

PLANNED SPEAKERS & TOPICS

Impact of Shield Termination Integrity on Surge Coupling in Shielded Ethernet Interfaces
David Tang[2], Jianquan Lou[2], Haiying Liu[2], Adam Walb[1], Rangarajan Soundararajan[1]
[1]Cisco Systems Inc, USA; [2]Cisco Systems (China) R&D Co., Ltd., China

Practicability of the Shielding Effectiveness Method 'Wire Coupling' for In-situ Measurements
Steffen Schulze
Würth Elektronik eiSos GmbH, Germany

Comparison of Shielding Effectiveness Measurement Between New 1 GHz Triaxial cell and Reverberation Chamber
Katherine Valencia Salas[1,2], Moncef Kadi[1,3], Habib Boulzazen[1,3], Fabien Ndagijimana[4], Nizar Bechir[2], Xavier Lernon[2]
[1]University of Rouen Normandy, Universite de Rouen Normandie, Mont-Saint-Aignan, Normandy, FR, academic, France; [2]Federal-Mogul Powertrain LLC, France; [3]ESIGELEC, France; [4]Laboratoire de Genie Electrique de Grenoble, France

The Impacts Of Various Structure Compositions On Enabling Differential Mode To Common Mode Conversions Of Shielded Propagating Currents
David Norte
BAE Systems, Inc., USA

The following information is preliminary and subject to change.

TC2_3 TECHNICAL PAPERS

EMC MEASUREMENTS - RADIATED EMISSIONS

1:30 PM - 3:00 PM

Room: Coronado A

Sponsored by TC-2 EMC Measurements

Chair:
Dave Arnett, *Garmin International Inc*
Co-Chair:
Monrad Monsen, *Oracle*

PLANNED SPEAKERS & TOPICS

Estimation of 10 m Radiated Emissions from Measurements at 3 and 5 m Using Source Reconstruction
Shivali Singh[1], Milad Rezaei[2], Lijun Jiang[1], Daryl Beetner[1]
[1]Missouri University of Science and Technology, USA; [2]Missouri University of Science and Technology, USA

Extrapolation Method for Predicting Unmeasurable Radiation from Partial Measurements
Milad Rezaei[3], Ben Kim[1], Jeremy Chinn[1], Jaswanth Vutukury[1], Daryl Beetner[3], Lijun Jiang[2]
[1]Meta Platforms, Inc., USA; [2]Missouri University of Science and Technology, USA; [3]Missouri University of Science and Technology, USA

Radiated Emission Measurement in FAR Using VHF-LISN for AC Mains Cable Termination
Kunihiro Osabe[1], Nobuo Kuwabara[2], Shinichi Okuyama[2], Hidenori Muramatsu[2], Toshiki Shimasaki[2]
[1]VCCI Council, Japan; [2]VCCI Council, Japan

Photo by Richard Georgerian

The following information is preliminary and subject to change.

TC5_2 TECHNICAL PAPERS

ELECTROMAGNETIC PULSE COUPLING TO ENCLOSURES AND TRANSMISSION LINES

3:30 PM - 5:00 PM

Room: Cortez D

Sponsored by TC-5 High Power Electromagnetics

Chair:
William Radasky, *Metatech Corporation*
Co-Chair:
Akiyoshi Tatematsu, *Central Research Institute of Electric Power Industry*

PLANNED SPEAKERS & TOPICS

3 D FDTD Simulation of Lightning Magnetic Fields in a Reinforced Concrete Building: Comparison with Measurements
Akiyoshi Tatematsu, Kensuke Teramoto
Central Research Institute of Electric Power Industry, Japan

Characteristic Modes and the Generalized Admittance Approach revisited for Aperture Coupling Analysis in the Resonance Region
Julius Griese, Frank Gronwald
Universitat Siegen Fakultat IV Naturwissenschaftlich-Technische Fakultat, Germany

Adaptive Stochastic Sampling for Statistical HPEM Response Analysis
Mario Echeverri Bautista
TNO, Netherlands

The following information is preliminary and subject to change.

TC8_1 TECHNICAL PAPERS

MAGNETIC SHIELDING AND CLEANLINESS TECHNIQUES FOR SPACE MISSIONS

1:30 PM - 2:30 PM

Room: Cortez D

Sponsored by TC-8 Aeronautics and Space EMC

Chair:
Nika Amralah, *Department of National Defence*
Co-Chair:
Ashton Schessler, *Blue Origin LLC*

PLANNED SPEAKERS & TOPICS

Design, Fabrication, and DC Magnetic Emission Testing of Additively Manufactured (3D-Printed) Magnetic Shields
Katherine Dang[1], Pablo Narvaez[2], Samad Firdosy[1], Kevin Pham[3], Ian Mckinley[1]
[1]Jet Propulsion Laboratory, USA; [2]Jet Propulsion Laboratory, USA; [3]Jet Propulsion Laboratory, USA

Magnetic Cleanliness Assessment of the Mars 2020 Perseverance Rover for Sample Paleomagnetism and Implications for Future Mars Sample Return Missions
Chi-Chien N. Huang[2], John Trinh[2], Katherine Dang[2], Benjamin P. Weiss[1], Boyan Kartolov[2], Pablo Narvaez[2]
[1]Massachusetts Institute of Technology, USA; [2]Jet Propulsion Laboratory, USA

Photo by Patrick Andre

The following information is preliminary and subject to change.

TC8_2 TECHNICAL PAPERS

ELECTROMAGNETIC COUPLING AND RADIATED ENVIRONMENTS IN AEROSPACE SYSTEMS

10:30 AM - 12:00 PM

Room: Cortez D

Sponsored by TC-8 Aeronautics and Space EMC

Chair:
Randy Jost, *Utah State University*
Co-Chair:
Stephanie Zajac, *Johns Hopkins University Applied Physics Laboratory*

PLANNED SPEAKERS & TOPICS

Chip Level Sneak Path in Avionics and Potential for EMC Problems
Reinaldo J. Perez
IEEE, USA

Leakage Electromagnetic Field Suppression from Apertured Enclosures Using Ultra-Lightweight CNT Aerogel Absorbers
Sho Muroga1, Dan Suzuki[3], Yugo Koishikawa[1], Saijian Ajia[1], Eriko Kijima[2], Tomonaga Ueno[2], Motoshi Tanaka[3], Shotaro Takahashi[3], Yasushi Endo[1], Kishio Hidaka[1]
[1]Tohoku University, Japan; [2]Nagoya Daigaku, Japan; [3]Akita Daigaku, Japan

Radiated Field By RF Emitters Toward A Payload During Fairing Jettisoning On A Space Launcher
Florent Todeschini
ArianeGroup SAS, France

DALLAS FUN FACTS

DALLAS ARBOREUM AND BOTANICAL GARDEN

The 66-acre Dallas Arboretum and Botanical Garden is globally acclaimed for its beauty and architecture, receiving awards for the magnificent displays of greenery. View the pecan groves, magnolias, crape myrtles, cherry trees, and azaleas as you wander. One of the notable features of the Dallas Arboretum is that you don't need to leave the premises for meals, as many restaurants and cafés are incorporated into the design of the gardens. Explore the gardens and have a leisurely day in Dallas!

The following information is preliminary and subject to change.

TC9_1 TECHNICAL PAPERS

MODELING AND ANALYSIS OF CABLES AND INTERCONNECTS

3:30 PM - 5:30 PM

Room: Cortez C

Sponsored by TC-9 Computational Electromagnetics

Chair:
Chiu-Chih Chou, *National Central University*
Co-Chair:
Shaowu Huang, *Palo Alto Networks Inc*

ABSTRACT:

This session presents modeling and analysis techniques for understanding EMI mechanisms in cables and interconnects. Topics include realistic mode conversion in twisted pairs, fast analytical prediction of harness emissions, and the impact of test waveform parameters on induced interference. The work emphasizes physics-based insight and efficient methods for early-stage EMC design.

PLANNED SPEAKERS & TOPICS

Impact of CS114 Repetition Rate and Duty Cycle on the Induced Interference
David Norte
BAE Systems, Inc., USA

Exact Edge Singularities in mmWave Interconnects: A Quasi-3D Schwarz-Christoffel Solver
Takahiro Yanagi
Asteria X, Japan

Achieving Realistic Mode Conversion Levels in Numerical Cable Modeling of Unshielded Twisted Pairs for Automotive Ethernet
Sebastian Soldwisch[2], Shane Helstrom[2], Ryan French[2], Patrick Campbell[2], Patrick DeRoy[1], Mike Fredd[3]
[1]Analog Devices Inc, USA; [2]Electro Magnetic Applications, Inc., USA; [3]Analog Devices Inc, USA

Estimating Radiated Emissions from Wire Harnesses with Bounding Analytical Models in PSpice
Russell Carroll
EMI Sleuth, USA

The following information is preliminary and subject to change.

TC9_2 TECHNICAL PAPERS

SIMULATION AND DESIGN WITH MEASUREMENT CORRELATION FOR SYSTEM-LEVEL EMC

10:30 AM - 12:00 PM

Room: Cortez C

Sponsored by TC-9 Computational Electromagnetics

Chair:
Pavithrakrishnan Radhakrishnan, *Oklahoma State University*

Co-Chair:
Shaowu Huang, *Palo Alto Networks Inc*

ABSTRACT:

This session highlights simulation and design methodologies for system-level EMC with strong emphasis on measurement correlation. Contributions include domain decomposition techniques for large-scale systems, virtual twin frameworks aligned with IEC standards, and SIPI-based modeling of stray current effects in high-power racks. The session bridges simulation and real-world validation for compliance-driven design.

PLANNED SPEAKERS & TOPICS

EMC Modeling of Modular Multi Level HVDC Converters using Domain Decomposition
Fernando Rodriguez Varela[1], Arne Schröder[1], Gustaf Sandberg[2]
[1]Hitachi Energy Switzerland Ltd, Switzerland; [2]Hitachi Energy Sweden AB, Sweden

A Computational Electromagnetics Based Virtual Twin Framework for IEC Consistent EMC Assessment of High-Speed Interconnects
Safal Sharma
Molex LLC, USA

High-Power Rack Stray Currents: EMC Exposure Quantified Through SIPI Modeling
Mehdi Mechaik, Sajjad Ahmed
TE Connectivity Corporation, USA

The following information is preliminary and subject to change.

TC9_3 TECHNICAL PAPERS

MODELING AND ANALYSIS WITH EXPERIMENTAL VALIDATION OF COMPLEX ELECTROMAGNETIC ENVIRONMENTS

1:30 PM - 3:00 PM

Room: Cortez C

Sponsored by TC-9 Computational Electromagnetics

Chair:
Shengxuan Xia, *Missouri University of Science and Technology*

Co-Chair:
Shaowu Huang, *Palo Alto Networks Inc*

ABSTRACT:

This session explores modeling and analysis of complex electromagnetic environments with experimental validation. Topics include statistical field behavior in enclosures, time-domain response of reverberant systems, and efficient simulation of reverberation chamber environments using plane-wave superposition. The work provides validated frameworks for predicting EMI behavior in highly complex settings.

PLANNED SPEAKERS & TOPICS

Field Statistics within a Cinical Enclosure
Evelyn A. Dohme[1], Jeff Kolski[3], Jillian Martinez[3], Arielle Frank[2], Paul Bremner[2], Thomas W. Hussey[4]
[1]Sandia National Laboratories, USA; [2]Robust Physics, USA; [3]Sandia National Laboratories, USA; [4]T W Hussey LLC, USA

Time Domain Statistics of Electric Field Response to Chirp Waveform Excitation in a Semi-reverberant Environment - using Statistical Wave Physics Simulation
Paul Bremner[1], Weitao Dai[2], Conor McKeever[1], Mazin Mustafa[3], James C. West[4], Chuck Bunting[5]
[1]Robust Physics, USA; [2]Robust Physics, USA; [3]University of Minnesota Twin Cities, USA; [4]Oklahoma State University, USA; [5]Oklahoma State University, USA

Plane Wave Superposition Modeling of the Statistical Electromagnetic Environment in an Ideal Reverberation Chamber Using FEM Solver
Derek Holloway[1,2], Pavithrakrishnan Radhakrishnan[1,2], Chuck Bunting[1,2]
[1]Oklahoma State University, USA; [2]Oklahoma State University, USA

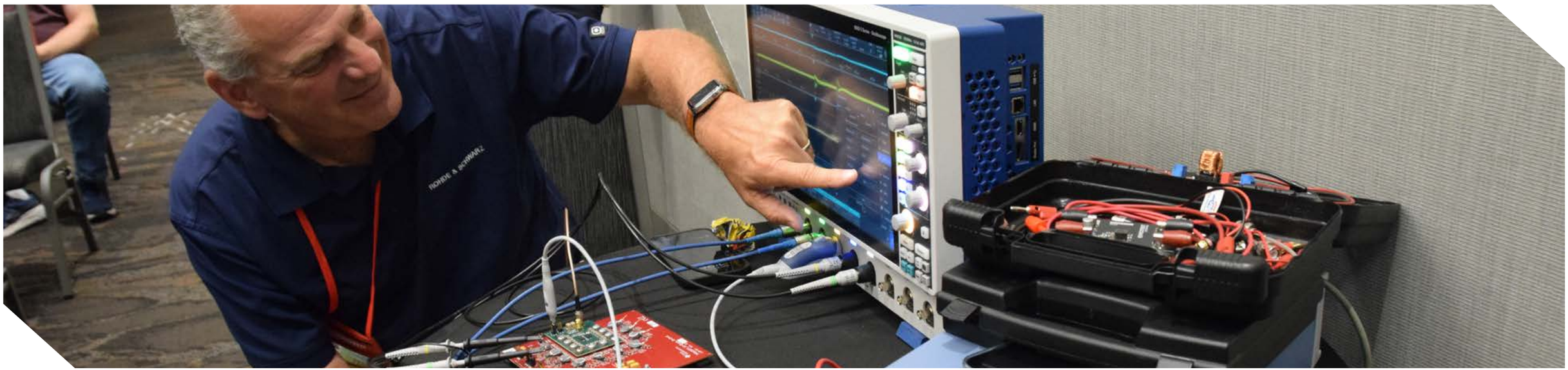


Photo by Richard Georgerian

The following information is preliminary and subject to change.

POSTER SESSIONS

P01 POSTER SESSION

9:30 AM - 11:30 AM

Poster Area, Exhibit Hall

A Broadband Transparent Antenna for Application in Mobile Communication Systems
Zechen Li[1,2], Xingbao Lin[3], Youqian Su[2], Zibin Weng[4]
[1]Xidian University Hangzhou Institute of Technology, China; [2]Xidian University, China; [3]Xidian University School of Electronic Engineering, China; [4]Xidian University National Key Laboratory of Antennas and Microwave Technology, China

Enhancing Power Transfer Efficiency and Stability in Dynamic Wireless Power Systems through Coil Structure Optimization
Tuan Kiet Le[1], Indranil Bhattacharya[2]
[1]Tennessee Tech University, USA; [2]Binghamton University, USA

EMI-Aware RC Snubber Optimization in Boost Converters Using Reinforcement Learning
Ali Ghaffarpour[1], Majid Mehrasa[2], Eduardo M. Rodrigues[3,4]
[1]New York Institute of Technology, USA; [2]The University of New Orleans, USA; [3]Universidade de Lisboa Instituto Superior Tecnico, Portugal; [4]Instituto de Engenharia de Sistemas e Computadores Investigacao e Desenvolvimento em Lisboa, Portugal

Signal and Power Integrity Co-Design of High-Speed Interposer Channel in Multi-Tower High-Bandwidth Memory (MT-HBM) Architecture considering Power Supply Induced Jitter (PSIJ)
Youngsu Yoon, Seonguk Choi, Jiwon Yoon, Haeseok Suh, Keunwoo Kim, Junghyun Lee, Hyunjun An, Jaegeun Bae, Byeongmok Kim, Junho Park, Eunji Seo, Joungho Kim
Korea Advanced Institute of Science and Technology, Korea (the Republic of)

ISAR Imaging Technology Based on CS Algorithm and Frequency Extrapolation
Yuchen Dai[1,2], Minghua Hu[1,2], Xiongfei Long[1,2], Shurong Deng[1,2], Qisheng Pan[1,2], Zibin Weng[2,3]
[1]Xidian University School of Electronic Engineering, China; [2]The National Key Laboratory of Radar Detection and Sensing, China; [3]Xidian University National Key Laboratory of Antennas and Microwave Technology, China

A High-Gain Scannable Fabry-Perot Antenna
Minghua Hu[1,2], Yuchen Dai[1,2], Zechen Li[1,2], Shurong Deng[1,2], Qisheng Pan[1,2], Zibin Weng[1,2]
[1]Xidian University School of Electronic Engineering, China; [2]The National Key Laboratory of Radar Detection and Sensing, China

Design of a Transparent Transmitarray Antenna for Ku-Band
Shurong Deng[1,2], Qisheng Pan[1,2], Minghua Hu[1,2], Yuchen Dai[1,2], Zechen Li[1,2], Zibin Weng[1,2]
[1]Xidian University School of Electronic Engineering, China; [2]The National Key Laboratory of Radar Detection and Sensing, China

GNSS Signal-Based Phase-Shift Control for Common-Mode Noise Reduction in Parallel-Connected Power Converters
Shotaro Takahashi[1], Ryosuke Kanbayashi[1], Motoshi Tanaka[1], Kishio Hidaka[2], Saijian Ajia[2], Yasushi Endo[2], Tomonaga Ueno[3], Sho Muroga[2]
[1]Akita Daigaku, Japan; [2]Tohoku Daigaku, Japan; [3]Nagoya Daigaku, Japan

Modeling and Analysis of Location-Dependent Power Supply Induced Jitter (PSIJ) Considering Spatially-Distributed Hierarchical PDN
Yuchul Jung, Uichan Kim, Yeji Kim, Sungbum Kim, Jonghyeon Lee, Jiwoon Moon, Youngwoo Kim
Sejong University, Korea (the Republic of)

An Accurate 2D FEM Solver for the Efficient RLGC Extraction in the Anisotropic Medium with Adaptive Skin-depth
Tingyu Shi[1], Jiahuan Huang[1], Xiaoyan Xiong[2], Victor Khilkevich[4], Lijun Jiang[3]
[1]Missouri University of Science and Technology, USA; [2]Cadence Design Systems Inc, USA; [3]Missouri University of Science and Technology, USA; [4]Missouri University of Science and Technology, USA

2x-Thru De-Embedding-Based Characterization of UCIe-A Interconnects up to 50 GHz
Sungjin Lee[1], Daehee Park[2], Subin Jo[1], Heehwang Kim[1], Jonghyuk Jeong[1], Dongsu Kim[2], Seungil Jeung[1], Jaeyong Cho[1]
[1]Huwin, Korea (the Republic of); [2]Korea Electronics Technology Institute, Korea (the Republic of)

TECHNICAL PROGRAM
WEDNESDAY, AUGUST 5
EMC+SIPI 2026 DALLAS, TEXAS · AUGUST 3 - 7

The following information is preliminary and subject to change.

Double Reflective MW Ellipsometry
Jeson Chen, Casper Huang
Fu Jen Catholic University, Taiwan

Bridging Cable-Level and System-Level Immunity
Kiran Kumar Dhani Reddy[1,2]
[1]Hexagon AB, Sweden; [2]NovAtel Inc, Canada

A Design Methodology for High-Loading Differential Clock Signals in Multilayer Structures
YUN-HO LEE[1,2], SoYoung Kim[2]
[1]Samsung Institute of Technology, Korea (the Republic of); [2]Sungkyunkwan University - Natural Sciences Campus, Korea (the Republic of)

Matrix-Free Time-Domain Finite Element Method for Electromagnetic-Thermal Co-Simulation
Yi-Yao Wang[1,2], Wenyan Yin[1,2], Qiwei Zhan[1,2]
[1]Zhejiang University, China; [2]Zhejiang University, China

Dual-triangle Spread Spectrum Modulation in Class-D Audio Amplifiers
Zhi Gao, Rong Rong, Dylan Yao, Xin Guo, Lijun Chen
Texas Instruments Inc, USA

Co-Optimizing Power and Thermal Integrity Using Heat Path Block and Silicon Capacitors
Jisoo Hwang[1,2], Kyojin Hwang[3], Youngsang Cho[2], Jun So Pak[2], Heeseok Lee[2], SoYoung Kim[1]
[1]Sungkyunkwan University - Natural Sciences Campus, Korea (the Republic of); [2]Samsung Electronics Co Ltd, Korea (the Republic of); [3]Murata Manufacturing Co., Ltd., Korea (the Republic of)

Fabrication of an Ultra-Lightweight Electromagnetic Absorber for the Low-GHz Band
Eriko Kijima[1], Kishio Hidaka[2], Sho Muroga[2], Motoshi Tanaka[4], Shotaro Takahashi[5], Dan Suzuki[3], Tomonaga Ueno[1]
[1]Nagoya Daigaku, Japan; [2]Tohoku Daigaku, Japan; [3]Tohoku Daigaku Daigakuin Kogaku Kenkyuka Kogakubu, Japan; [4]Akita Daigaku, Japan; [5]Akita Daigaku, Japan

Discussion of Electromagnetic Interference Impacting Triboelectric Nanogenrator Use on the Lunar Surface
Eve Klopf
High Point University, USA

Investigation of Simplified Estimation of Electromagnetic Properties for a Plate-Type Absorber Using Waveguide Measurement
Motoshi Tanaka[1], Mayo Arai[2], Dan Suzuki[3], Shotaro Takahashi[2], Tomonaga Ueno[4], Sho Muroga[3]
[1]Akita Daigaku, Japan; [2]Akita Daigaku, Japan; [3]Tohoku Daigaku, Japan; [4]Nagoya Daigaku, Japan

Engineered Silicone Composites: Flexible Elastomers for EC and EMI Applications
Julia Sunderland[1,2], Dan Zhao[2], Joe Sootsman[2]
[1]The Dow Chemical Company, USA; [2]Dow Chemical, USA

Analysis of Electromagnetic Radiation From Slots on Metal Plate Excited by Cable Currents
Hyun Ho Park[1], Jong Hwa Kwon[2]
[1]The University of Suwon, Korea (the Republic of); [2]Electronics and Telecommunications Research Institute, Korea (the Republic of)

Research on the model of Electromagnetic Interference from Electric Drive System
Tianhong Tan
Harbin Engineering University, China

EMI from Phased-Array Satellite Terminal Causing False Triggers of Maritime Optical Fire Alarms
Adarsh M. Verghese
Independent Researcher, USA

Explainable AI-Driven Optimization of Surface Plasmon Resonance Biosensors
Md Saiful Islam
Military Technological College, Oman

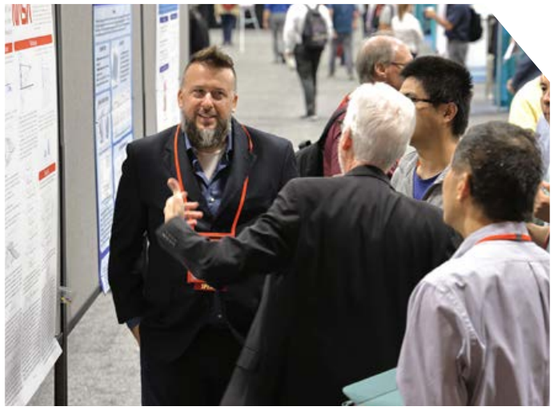


Photo by Patrick Andre

The following information is preliminary and subject to change.

SC3_4 TECHNICAL PAPERS

AI AGENT FOR SI, PI, EMC, AND EMI

10:30 AM - 12:00 PM

Room: Coronado C

Sponsored by SC-3 Machine Learning and Artificial Intelligence in EMC and SIPI

Chair:
Hanzhi Ma, *Zhejiang University*
Co-Chair:
Karol Niewiadomski, *Universiteit Twente*

PLANNED SPEAKERS & TOPICS

Potential-to-Field Neural Network for Efficient Electric Field Prediction
Yuhao Xu, Jiarui Qiu, Yining Jiang, Pengqi Fu, Yuxiang Tian, Hanzhi Ma
Zhejiang University, China

LLM-based Signal Integrity Agent for High-Speed Link Analysis
Yuxiang Tian, Jiarui Qiu, Songjun Zhang, Xiaolei Zhu, Hanzhi Ma
Zhejiang University, China

Intelligent Schematic Verification for EMC Design Using Agentic AI and Trusted Internal Design Data
Seshasai Dekkapati
Schneider Electric India Pvt Ltd, India

The following information is preliminary and subject to change.

TC10_13 WORKSHOP

TC10_13 SI/PI FOR EMERGING TECHNOLOGIES

10:30 AM - 12:00 PM

Room: Cortez A

Sponsored by TC-10 Signal and Power Integrity

Co-Chair:
Giorgi Maghlakelidze, *NVIDIA Corp*
Co-Chair:
Matteo Cocchini, *International Business Machines Corp*

PLANNED SPEAKERS & TOPICS

Joint Modeling of Signal Integrity and Device Reliability for Memristor Crossbar Array-Based Neuromorphic Chip
Yining Jiang[1], Hanzhi Ma[2], Jiarui Qiu[4], Yiqin Xiang[1], Shuoxin Ji[4], Ye Shi[4], ErPing Li[3]
[1]Zhejiang University, China; [2]Zhejiang University, China; [3]Zhejiang University, China; [4]Zhejiang University, China

Novel Multi-domain Power Integrity Evaluation System for Advanced Packages
Suresh Parameswaran, Thomas To, Nui Chong, Jonathan Chang
Advanced Micro Devices Inc Austin, USA

An Investigation into the Influence of Indirect Lightning Strike Protection Devices on High-Speed Signal Transmission
Yaogen Li, Zhongyuan Zhou, Ren Jinjing
Southeast University, China

Photo by Richard Georgerian

The following information is preliminary and subject to change.

TC10_4 TECHNICAL PAPERS

TC10_4 HIGH-SPEED VIA DESIGN & MODELING

10:30 AM - 12:00 PM

Room: Cortez B

Sponsored by TC-10 Signal and Power Integrity

Co-Chair:
Tao Wang, *DIS Tech*
Co-Chair:
Chulsoon Hwang, *Missouri University of Science and Technology*

PLANNED SPEAKERS & TOPICS

Simplified Design Approach for Via Transitions up to 67 GHz
Giorgi Tsintsadze[1], Reza Vahdani[2], James Drewniak[3], Richard Zai[4]
[1]Missouri University of Science and Technology, USA; [2]Missouri University of Science and Technology, USA; [3]Missouri S&T EMC Laboratory, Missouri University of Science and Technology, USA; [4]PacketMicro. Inc., USA

A Novel Asymmetric Via Design For Crosstalk Mitigation Due to PCB Layer Misalignment
Hao-Han Hsu[1], Chin-Ning Hu[2], Hayden Huang[2]
[1]Asustek Computer Inc, USA; [2]Asustek Computer Inc, Taiwan

Enhanced Intrinsic Via Model of High-Speed Vias
Sathvika Bandi[2], Manish K. Mathew[2], Shruti Sawant[2], Kevin Cai[1], Shameem Ahmed[1], Chulsoon Hwang[2]
[1]Cisco Systems, Inc, USA; [2]Missouri University of Science and Technology, USA

DALLAS FUN FACTS

BILLY BOB'S TEXAS, THE WORLD'S LARGEST HONKY TONK

30 miles from the Hilton Anatole Dallas in Fort Worth is Billy Bob's Texas, the world's largest honky-tonk and historic country music dance venue operating since 1981. Countless country singers and band members have performed, played their hearts out on stage, and put their handprints in the wall of fame as a marker of their time at Billy Bob's. During your stay, view handprints and autographs from Garth Brooks, Willie Nelson, and Johnny Cash, and check out the large dance floor where scenes from Over the Top and Baja Oklahoma were filmed. Nothing captures the spirit of Texas quite like country music.

The following information is preliminary and subject to change.

TC2_4 WORKSHOP

EMC MEASUREMENTS - HERO AND PIM

10:30 AM - 12:00 PM

Room: Coronado A

Sponsored by TC-2 EMC Measurements

Co-Chair:
Dave Arnett, *Garmin International Inc*
Co-Chair:
Monrad Monsen, *Oracle*

PLANNED SPEAKERS & TOPICS

An SDR-Based Alternative HERO Instrumentation Method for EID Characterization
Abigail L. Mccrary[1], Saif Mostafa[1], Chuck Bunting[3], Pavithrakrishnan Radhakrishnan[2]
[1]Oklahoma State University, USA; [2]Oklahoma State University, USA; [3]Oklahoma State University, USA

Horizontal LPDA (13-27 MHz) for Naval HERO / EMV Testing : Design, 3D Full-wave Simulation, and Experimental Validation
Juliette Reeder[1,2], Jack Hicks[1,2], Chuck Bunting[1,2], Pavithrakrishnan Radhakrishnan[1,2]
[1]Oklahoma State University, USA; [2]Oklahoma State University, USA

Harmonics based PIM Characterization for Sideband Spectrum Estimation
Hariharan Prabakar, Shengxuan Xia, Chulsoon Hwang
Missouri University of Science and Technology, USA

The following information is preliminary and subject to change.

TC4_1 TECHNICAL PAPERS

TECHNIQUES FOR EVALUATING SHIELDING EFFECTIVENESS

10:30 AM - 12:00 PM

Room: Coronado B

Sponsored by TC-4 Electromagnetic Interference Control

Co-Chair:
Pavithrakrishnan Radhakrishnan, *Oklahoma State University*

PLANNED SPEAKERS & TOPICS

On-Board Inverted-F Antenna for Near-Field Board-Level Shielding Evaluation: A Simulation Study
Lirim Koraqi[1,2], Pavithrakrishnan Radhakrishnan[3], Tim Claeys[1], Johan Catrysse[1], Davy Pissoort[1,2]
[1]Katholieke Universiteit Leuven, Belgium; [2]Flanders Make, Belgium; [3]Oklahoma State University, USA

Shielding Effectiveness Variability: Experimental Study in Nested Chambers -- Undermoded Regimes
Saif Mostafa[1,2], Derek Holloway[1,2], Chuck Bunting[1,2], Pavithrakrishnan Radhakrishnan[1,2]
[1]Oklahoma State University, USA; [2]Oklahoma State University, USA

Low-Frequency E and H Shielding Characterization of Planar Materials Using PCB-based Dual-TEM Cell: A Study Using Numerical Simulations
Subramaniam S. Sankar[1], Pavithrakrishnan Radhakrishnan[2], Stanislav Kovar[3]
[1]Univerzita Tomase Bati ve Zline, Czechia; [2]Oklahoma State University, USA; [3]Univerzita Tomase Bati ve Zline Fakulta Aplikovane Informatiky, Czechia

The following information is preliminary and subject to change.

TC5_1 TECHNICAL PAPERS

COMPUTATION OF LIGHTNING ELECTROMAGNETIC PULSE AND DISTRIBUTION LINE EFFECTS

10:30 AM - 12:00 PM

Room: Cortez D

Sponsored by TC-5 High Power Electromagnetics

Co-Chair:
Akiyoshi Tatematsu, *Central Research Institute of Electric Power Industry*
Co-Chair:
Michael McInerney, *Consultant*

PLANNED SPEAKERS & TOPICS

Computation of LEMPs with the CIP Method in the 2-D Spherical Coordinate System
Jumpei Murakami, Yohei Tanaka, Yoshihiro Baba
Doshisha Daigaku, Japan

Preliminary Analysis on Back-flashover Rates of Transmission Lines Considering the Effect of Lightning Electromagnetic Pulse
Akifumi Yamanaka, Kazuyuki Ishimoto, Akiyoshi Tatematsu
Central Research Institute of Electric Power Industry, Japan

Simulation Study on Lightning Overvoltage of Distribution Lines of Southern China: Influence of Cross-arm Connection
Xiao He, yaping Du, Yuxuan Ding, Xiangen Zhao, Chakhung Yeung, Jingjie Ye
The Hong Kong Polytechnic University Faculty of Engineering, Hong Kong

Photo by Patrick Andre

The following information is preliminary and subject to change.

WT_A3 WORKSHOP

TEST AND MEASUREMENT FUNDAMENTALS

1:30 PM - 5:00 PM
Room: Cortez B
Sponsored by Education Committee

Co-Chairs:
John McCloskey, *EMC-Closkey*
Vignesh Rajamani, *Rohde & Schwarz USA, Inc.*
Patrick Andre, *Andre Consulting, Inc.*

ABSTRACT:

EMI/EMC testing is crucial for ensuring that electronic devices perform reliably in their intended electromagnetic environment and don't interfere with other devices. Tests must be optimized to improve efficiency and reduce cost. Most importantly, the test engineer must have a thorough understanding of the test equipment and its capabilities is essential in order to ensure the robustness of the testing process and reliability of the results. In this half-day workshop, we will cover some fundamental concepts of testing accompanied by live demonstrations showcasing proper usage of oscilloscopes, spectrum analyzers, EMI receivers, and vector network analyzers (VNAs) for EMC measurements and debugging.

PLANNED SPEAKERS & TOPICS

Overview of Test and Measurement Concepts
John C. McCloskey
EMC-Closkey, USA

Practical Applications and Common Measurement Mistakes (and How to Avoid Them)
Patrick G. Andre
Andre Consulting, Inc., USA

Hands-On Demonstrations
Vignesh Rajamani
Rohde & Schwarz USA, Inc., USA

DALLAS FUN FACTS

WOOL

The roots of Texas's wool and mohair industry stretch back to the early 1700s, when Spanish missionaries and soldiers brought the first sheep and goats into the region. Over the centuries, that small beginning grew into a major agricultural force. Today, Texas leads the nation in wool production, supplying more wool than any other state in the country.

The following information is preliminary and subject to change.

WT_M2 WORKSHOP

AEROSPACE EMC WORKSHOP

1:30 PM - 5:00 PM
Room: Coronado A
Sponsored by TC-8 Aeronautics and Space EMC

Chair:
Carlos Aviles, *Northrop Grumman Corp*
Co-Chair:
Nika Amralah, *Department of National Defence*

ABSTRACT:

This workshop discusses topics in Aerospace EMC, including design, development, and test for airplanes, helicopters, missiles, and spacecraft.

PLANNED SPEAKERS & TOPICS

System Verification – An EMC Engineer's Approach - E3
John La Salle
Northrop Grumman, USA

Aeronautical Power Chain: New Challenges for EMC Engineers
Charles Jullien
Safran Electrical and Power, France

Atmospheric and Environmental Effects on RF Signal Propagation for Aircraft EMC
Billy Gonzalez
Northrop Grumman Corp, USA

Addressing the Increasing Wireless Requirements for Commercial Aircraft and Aerospace Applications
Dennis Lewis
The Boeing Company, USA

Understanding Spacecraft and Aircraft Avionics Hardware for the Development of Appropriate EMC Requirements and Testing
Reinaldo J. Perez
Jet Propulsion Laboratory, USA

The EMC Impact of the Aerospace E3 Environment on Design, Testing, Maintenance and Operations
Randy J. Jost
Utah State University, USA

Design Philosophies for EMC-Hardened Aeronautics Platforms
Jinsoo Kim
Lockheed Martin Corporation Aerospace and Defense, USA

Lightning Strike Protection of Aircraft Integral Fuel Tanks
Eric Cramer
Northrop Grumman Corp, USA

The following information is preliminary and subject to change.

WT_01 TUTORIAL

LESSONS LEARNED CREATING RELIABLE COMPUTATIONAL MODELS FOR SI, PI AND EMC APPLICATIONS

1:30 PM - 5:00 PM

Room: Cortez A

Sponsored by TC-9 Computational Electromagnetics

Co-Chairs:

Patrick DeRoy, *Analog Devices Inc*
Scott Piper, *Dassault Systemes Americas Corp*
Bruce Archambeault, *Missouri University of Science and Technology*

ABSTRACT:

This tutorial will expose the attendees to the lessons learned by a number of industry experts over the years. The goal being that the attendees will benefit from the, sometimes painful, learning experiences of the presenters. Computational tools are very powerful and simulation is invaluable to the modern design engineer but there is still an art to using these tools effectively. In all disciplines, hindsight is perfect and the opportunity to learn from others is a valuable resource. This tutorial will not only show lessons learned but also expose the attendees to fundamental ways of thinking through their models to better ensure success. Examples relevant for Signal Integrity, Power Integrity and Electromagnetic Compatibility design will be shared. The critical subject of Validation is covered, considering the full spectrum of electronics modeling and simulation from SPICE to 3D full-wave, to co-simulations. The approaches one can take with modern simulation tools, from fast 2D pre-layout simulations to full 3D "Virtual Twin" simulations (when appropriate) will also be discussed. Experiences in applying EM simulation tools for gaining insights into real-life shielding challenges will be covered. In addition, lessons learned correlating measurements and simulations will be discussed, with an emphasis on balancing the strengths and weaknesses of each.

PLANNED SPEAKERS & TOPICS

Validation
Bruce Archambeault
Missouri University of Science and Technology, USA

EMC Virtual Twins
Scott Piper
Dassault Systemes Americas Corp, USA

Cable Modeling Conundrums: Measurement Based Models and Statistical Analyses
Patrick DeRoy[2], Flavia Grassi[1]
[1]Politecnico di Milano, Italy; [2]Analog Devices Inc, USA

Leveraging EM Simulation Tools to Gain Deeper Insights into Real-Life Shielding Challenges
Pavithrakrishnan Radhakrishnan
Oklahoma State University, USA

Photo by Richard Georgerian

The following information is preliminary and subject to change.

WT_03 TUTORIAL

TUTORIAL ON MACHINE LEARNING

1:30 PM - 5:00 PM

Room: Cortez C

Sponsored by SC-3 Special Committee on Machine Learning and Artificial Intelligence in EMC and SIPI

Chair:

Lijun Jiang, *Missouri University of Science and Technology*

Co-Chairs:

Alistair Duffy, *De Montfort University*
Hanzhi Ma, *Zhejiang University*

ABSTRACT:

Machine learning is profoundly impacting the landscape of every technology domain, including signal integrity, power integrity, EMC, and EMI engineering. This tutorial is for entry-level audiences who are interested in machine learning. The topics in this tutorial will practically guide audiences through the fundamentals of machine learning methods, resources needed for using machine learning methods, and successful application examples for EMC society. The invited speakers are frontier experts who have practical experience in machine learning method development and applications. This tutorial will aim to draw broader attention and guide hands-on experiences of machine learning for EMC/EMI, SI and PI technologies. This special session is sponsored by IEEE EMC Special Committee SC3 "Machine Learning and Artificial Intelligence in EMC and SIPI" and welcomes audiences from all IEEE EMC Technical Committees.

PLANNED SPEAKERS & TOPICS

Prompt Engineering: How to Talk to AI ... Successfully
Alistair Duffy
De Montfort University, United Kingdom

Outlook of AI and ML-Assisted Signal Integrity and Power Integrity
Matteo Cocchini
International Business Machines Corp, USA

Machine Learning Assisted Power Integrity Solutions
Chulsoon Hwang
Missouri University of Science and Technology, USA

From Machine Learning Basics to EMC and SIPI: A Foundational Overview
Hanzhi Ma
Zhejiang University, China

AI/ML Augmentation of Hardware Compliance Processes
Samuel Connor
International Business Machines Corp, USA

Compressed Sensing for EMC Applications
Zhong Chen
ETS-Lindgren, USA

Mathematical and Physical Thinking Behind Machine Learning
Lijun Jiang
Missouri University of Science and Technology, USA

The following information is preliminary and subject to change.

WT_06 WORKSHOP

RECENT ADVANCES IN NUMERICAL ANALYSIS TECHNIQUES FOR LIGHTNING TRANSIENTS IN POWER SYSTEMS AND ELECTRIC FACILITIES

1:30 PM - 5:00 PM

Room: Coronado D

Sponsored by TC-5 High Power Electromagnetics

Chair:
Akiyoshi Tatematsu, *Central Research Institute of Electric Power Industry*

Co-Chair:
Fernando Silveira, *Universidade Federal de Minas Gerais*

ABSTRACT:

Lightning strikes may cause damages of power equipment and malfunction of electronic devises, and numerical analysis is essential for predicting transient phenomena and designing effective countermeasures to suppress overvoltages and prevent failures and disturbances of power equipment and electronic devices. This workshop will provides a comprehensive overview of recent advances in numerical transient analysis for lightning phenomena in power systems and related facilities. The objectives are (i) to present cutting-edge full-wave and circuit-theory-based simulation methodologies for lightning transients, (ii) to illustrate their applications to real-scale power transmission, distribution, and renewable-energy installations, and (iii) to highlight emerging techniques that enhance modeling accuracy, computational efficiency, and practical engineering applicability.

PLANNED SPEAKERS & TOPICS

Recent Advances in FDTD-Based Lightning Transient Analysis Techniques and its Application to Substations and Other Facilities
Akiyoshi Tatematsu
Central Research Institute of Electric Power Industry, Japan

Recent Advances in the Hybrid Electromagnetic Model and its Application to the Assessment of the Lightning Performance of Transmission Lines
Fernando Silveira
Universidade Federal de Minas Gerais, Brazil

Development of Circuit-Theory-Based Lightning Transient Analysis Techniques and its Application to Distribution lines and Other Facilities
Akifumi Yamanaka
Central Research Institute of Electric Power Industry, Japan

From Full-Scale EMT Simulation to Machine-Learning-Assisted Modeling of Lightning Transients in Wind Turbines
Eduard Shulzhenko
Technische Universität Ilmenau, Germany

Photo by Karthik Vepuri

The following information is preliminary and subject to change.

WT_S2 WORKSHOP

AEROSPACE EMC STANDARDS UPDATES WORKSHOP

1:30 PM - 5:00 PM

Room: Coronado C

Sponsored by TC-8 Aeronautics and Space EMC

Chair:
Frederick Heather,

ABSTRACT:

Prior to integrating any electronics component into a larger system, it is highly desirable to assess its performance under environmental conditions that are representative of those that may be encountered during its operation in the larger system. For any given family of platforms, a standardized test approach ensures that such tests are controlled, reliable, and repeatable while minimizing the risk of potential problems at integrated system level.

This workshop discusses the following EMC test standards used in aerospace applications:

P2838™/D20: Standard for Aerospace Vehicle Component Lightning Strike Direct Effects Qualification
RTCA DO-160: Environmental Conditions and Test Procedures for Airborne Equipment
SAE AE-4 EMC Standards for Aircraft
ANSI C63.25 Working Groups are submitting their draft standards for characterizing Semi-Anechoic Chambers (SAC), Reverb Chambers (RC), and Compact Antenna Test Ranges (CATR) for the frequency range from 18-40GHz. Unlike previous standards, these will include multiple methods for labs to balance time, equipment cost, and precision of their measurement. This talk will discuss the coming standards, the trade-offs in the methods, and the technology available to achieve the most appropriate data set for commercial and private labs.
ANSI C63.25 Standards for Characterizing Semi-Anechoic Chambers (SAC), Reverb Chambers (RC), and Compact Antenna Test Ranges (CATR)
MIL-STD-461: Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment
AIAA S-121: Electromagnetic Compatibility Requirements for Space Equipment and Systems
SSC-T-008: Space Force Lightning Requirements

PLANNED SPEAKERS & TOPICS

Deep Dive into the IEEE Standard P2838™/D20 Draft Standard for Aerospace Vehicle Component Lightning Strike Direct Effects Qualification
Frederick W. Heather, Adrian Sun
The Aerospace Corporation, USA

Updates to RTCA DO-160 to Rev. H Environmental Conditions and Test Procedures for Airborne Equipment
Eric Stewart
Collins Aerospace, USA

ANSI C63.25 Standards for Characterizing Semi-Anechoic Chambers (SAC), Reverb Chambers (RC), and Compact Antenna Test Ranges (CATR)
Phillip Miller
RATLR, USA

Recent update to MIL-STD-461 Rev. H Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment
Finbarr O'Connor
Huntington Ingalls Industries Inc, USA

AIAA S-121 Electromagnetic Compatibility Requirements for Space Equipment and Systems
Jim Lukash
Lockheed Martin Space Systems, USA

SSC-T-008: Space Force Lightning Requirements
Adrian Sun
The Aerospace Corporation, USA

The following information is preliminary and subject to change.

WT_S6 TUTORIAL

CALIBRATION OF EMC TEST FACILITIES AND MEASUREMENT INSTRUMENTATION

1:30 PM - 5:00 PM

Room: Coronado B

Chair:
Janet O'Neil, *ETS-Lindgren*
Co-Chair:
Dennis Lewis, *The Boeing Company*

ABSTRACT:

This tutorial will present detailed information about the state of the art in calibration of EMC measurement equipment and test facilities required by many current international standards. Specific requirements and nuances that can challenge even the most experienced EMC practitioner will be discussed, and methods for practical implementation for real-world application will be shared with attendees. Speakers will include experts who are actively involved in using, writing and maintaining the standards in which the requirements are established. Material will be presented, representing activity within the related standards committees, including CISPR, ISO, ANSC C63® and IEEE. This tutorial will take a novel approach to equipment and facility calibration by delving into implementation of specific characteristics and requirements, as opposed to a general treatment of calibration. Calibration issues related to a variety of test facilities and measurement equipment and the associated standards will be included, including antennas per ANSI C63.5; field probes according to IEEE 1309; test sites used for antenna calibration and reference test sites, per revision being developed for CISPR 16-1-5 and future CISPR 16-1-6, C63.25.3. A new method will be shared that allows a more accurate and convenient method for LISN calibrations using a VNA.

Attendees can expect to improve their understanding of both the background of the latest requirements for calibration of EMC measurement equipment and facilities and practical aspects of performing or specifying the required calibrations.

PLANNED SPEAKERS & TOPICS

Antenna Calibration and Test Site Validation for Radiated Emissions from 18 GHz to 40 GHz: New Measurement Method Under Consideration by CISPR and ANSC C63® Standards
Zhong Chen
ETS-Lindgren, USA

Calibration of Field Probes for EMC Measurements (IEEE 1309)
Dennis Lewis
The Boeing Company, USA

New Calibration Method for Line Impedance Stabilization Networks (LISNs) Under Consideration by ANSC C63 and CISPR
Mike Heckrotte
Consultant, USA

Practical Aspects of Performing and Specifying Antenna and Field Probe Calibrations
Leon M. Enriquez
ETS-Lindgren, USA

The following information is preliminary and subject to change.

WT_V1 TUTORIAL

EMC, SI, AND ESD CHALLENGES IN AUTOMOTIVE

1:30 PM - 5:00 PM

Room: Cortez D

Chair:
Andreas Hardock, *Nexperia*
Co-Chair:
Sergej Bub, *Nexperia BV*

ABSTRACT:

Driven by the growing demand for high data processing, new high-speed interfaces are increasingly being adopted in the automotive industry, including Automotive SerDes (ASA) and Ethernet with data rates of 2.5 Gbps, 5 Gbps, and 10 Gbps. Automotive Ethernet, in particular, has gained significant traction since the introduction of 100BASE-T1 and 1000BASE-T1 in 2016. Today, Ethernet data rates beyond 10 Gbps are already being discussed for future automotive applications.

PLANNED SPEAKERS & TOPICS

SI/PI for High-Speed Interfaces
Venkat Satagopan[2], Andreas Hardock[1]
[1]Nexperia, Germany; [2]NVIDIA Corp, USA

ESD Protection and ESD Simulation for Automtoive Interfaces
Sergej Bub
Nexperia BV, Netherlands

EMC Simulation of DCDC Converters
Scott Piper
Dassault Systemes Americas Corp, USA

EMC Optimizations of DCDC converters
Todor Arsenov
Nexperia BV, Netherlands

Photo by ????

The following information is preliminary and subject to change.

SPS1_34 SPECIAL SESSION

ELECTROMAGNETIC COMPATIBILITY CHALLENGES AND SAFETY OF MEDICAL DEVICES IN CLINICAL ENVIRONMENTS

8:30 AM - 12:00 PM

Room: Coronado B

ABSTRACT:

The increasing complexity of medical devices and their widespread use in electromagnetically challenging clinical environments—such as MRI suites, operating rooms, and intensive care units—raise critical electromagnetic compatibility (EMC) and safety concerns. This Special Session focuses on emerging EMC challenges for medical devices, including susceptibility to electromagnetic fields, unintended coupling mechanisms, device–tissue interactions, and risk mitigation strategies. The session aims to bring together researchers, clinicians, device manufacturers, and regulatory experts to discuss recent advances in modeling, testing, and standards development related to medical device EMC. Topics will include both experimental and computational approaches, realworld incident analyses, and regulatory perspectives to ensure safe and reliable device operation in clinical settings.

Photo by Richard Georgerian

PLANNED SPEAKERS & TOPICS

Topics of Interest to Inform Revisions of ISO 14117, ISO 10974, and ANSI/AAMI PC76
James Kippola[1], Paul S. Stadnik[2], Michael Steckner[3], Tim Langeslay[4], Ladan Bulookbashi[5], Seth Seidman[6], Shiloh Sison[7]
[1]Boston Scientific Corporation, USA; [2]Micro Systems Engineering Inc, USA; [3]MKS Consulting, USA; [4]Medtronic Inc, USA; [5]AAMI, USA; [6]Food and Drug Administration, USA; [7]Abbott Laboratories Inc, USA

RF-induced Heating of Shorted Electrodes for Active Implantable Medical Device at 1.5 T
Genting Zeng[1], Ebrahim Farshad[1], Lingfei Zhang[1], Mir Khadiza Akter[2], Jeffrey Tsang[3], Ji Chen[1]
[1]University of Houston, USA; [2]University of Houston System, USA; [3]Saluda Medical Pty Ltd, Australia

Numerical and Experimental Evaluation of RF-Induced Heating from Titanium Mesh under 7 T MRI System Using a Four-Channel Dipole Array
Ibne Hasan Emon[1], Seung Min Lee[2], Qingyan Wang[1], Steven Wright[2], Ji Chen[1]
[1]University of Houston, USA; [2]Texas A&M University System, USA

Electric Current Density Distribution During Electroconvulsive Therapy
Kenneth Castleman[1], Mingtao Du[1], Kunlin Li[2], Yuhui Xu2, Nahyun Kim[1], Qianhui Ye[3], Zixiang Xiong[3], Fatima Merchant[2,4], Ji Chen[1,4]
[1]University of Houston, USA; [2]University of Houston, USA; [3]Texas A&M University System, USA; [4]The University of Oklahoma, USA

Magnetic Resonance equipment single-fault failures: implications for Active Implants
Michael Steckner
MKS Consulting, USA

Assessment of Small Loop Windowing Method for Low frequency Magnetic Field Immunity Testing
Yasaman Ardeshirpour, Joshua Guag, Seth Seidman, Howard Bassen
US Food and Drug Administration, USA

SPS4 SPECIAL SESSION

ACHIEVING POWER INTEGRITY WITH AI/ML

8:30 AM - 4:30 PM

Room: Coronado C

Chair:
Chulsoon Hwang, *Missouri University of Science and Technology*
Co-Chair:
Ling Zhang, *Zhejiang University*

ABSTRACT:

Achieving power integrity (PI) across the PCB, package, and silicon over multiple power domains of differing logic levels and functionalities remains a challenging and unsolved problem. Mature and proven commercial analysis tools for post-layout assessment are accurate and well-established. However, PI design and layout remain a trail-and-error process that requires considerable experience, effort, and engineering time to achieve successfully on modern high-speed designs. Locating the power net on a given layer(s) within the stackup, location of decoupling capacitors, values of capacitors, number, and achievable frequency range, are typical design parameters over the PCB and package. Mitigating undesired resonances resulting from interconnects and capacitances is critical. Currently, the physics of charge delivery across a power distribution network is well known, and optimization approaches for achieving a target impedance have been reported in the literature. However, PI design for modern systems that might include a sub-milli ohm target impedance for high-current ICs requiring hundreds of decoupling capacitors that must accommodate hundreds of routing channels, or mobile designs with numerous different power domains and limited space for decoupling, as well as other challenges remain unresolved with a proven design methodology or guidelines.

AI/ML algorithms are proving to be a powerful tool for challenging PI problems. In recent years, AI/ML algorithms have achieved unprecedented success in various complex tasks due to their outstanding ability to fit complex functions. PI design with hundreds of decoupling capacitors required in modern electronic circuits is a time-consuming and tedious process that cannot be well addressed by conventional optimization approaches or commercial tools. AI/ML algorithms, such as deep learning and deep reinforcement learning, have recently demonstrated great potential in solving complex PI problems without human intervention, such as decoupling capacitor optimization and pre-layout power distribution network design. The incorporation of AI/ML in PI design has the potential to significantly reduce the PI design cycle and promote the advancement of artificial intelligence-assisted electronic design automation (EDA) tools. However, the reusability and generalization performance of the trained AI/ML algorithms in different scenarios is one of the biggest challenges in this direction. Moreover, the reliability of AI/ML algorithms in finding the optimal solution when optimizing a tremendous search space still demands continuous research. Therefore, a special session about AI/ML algorithms in PI design, which may contribute to new ideas and solutions to the above challenges, is essential and meaningful.

Photo by Richard Georgerian

PLANNED SPEAKERS & TOPICS

Cost-Effective Hierarchical PDN Target Impedance Optimization Using PSIJ-Driven Deep Reinforcement Learning for Multiple Power Rails in a PCIe Gen6 SSD
Chulhee Cho, Hyeongi Lee, Youngjun Ko, Sungjin Yoon, Seonho Um, Jinwook Song, Kyungsuk Kim, Sunghoon Chun
Samsung Electronics Co Ltd, Korea (the Republic of)

Generative AI-Driven Placement of Decoupling Capacitors for Power Integrity Compliance
Nima Ghafarian Shoaee[2], Werner John[1,4], Ralf Brüning[3], Jürgen Götze[1]
[1]Technische Universitat Dortmund, Germany; [2]Technische Universitat Dortmund, Germany; [3]EMC Technology Center Paderborn, Zuken GmbH, Germany; [4]PYRAMIDE2525, Germany

Improvement of ML Based Fast Impedance Matrix Prediction for Subsequent PCB Decoupling
Jan Hessling[1], Haran Manoharan[2], Nikoloz Kharshiladze[2], Chulsoon Hwang[2], Christian Schuster[1]
[1]Technische Universitat Hamburg, Germany; [2]Missouri University of Science and Technology, USA

Efficient Power and Thermal Integrity Co-Optimization in Fan-Out Wafer-Level Package Using Multi-Objective Bayesian Optimization
Jisoo Hwang[1,2], GiWon Kim[4], HyunJoon Jeong[4], Myunghoon Lee[3], Ki Wook Jeong[3], SoYoung Kim[1,4]
[1]Sungkyunkwan University - Natural Sciences Campus, Korea (the Republic of); [2]Samsung Electronics Co Ltd, Korea (the Republic of); [3]Synopsys Inc, Korea (the Republic of); [4]Sungkyunkwan University - Natural Sciences Campus, Korea (the Republic of)

Genetic Algorithm (GA) based TSV Placement Optimization for HBM considering DC IR Drop
Byeongmok Kim[1], Chaemin Yang[1], Jiwon Yoon[1], Junho Park[1], Jaegeun Bae[1], Youngsu Yoon[1], Eunji Seo[1], Haeyeon Kim[2], Hyunsik Kim[2], Taeil Bae[2], Inchul Jeong[2], Joungho Kim[1]
[1]Korea Advanced Institute of Science and Technology, Korea (the Republic of); [2]SK hynix Inc, Korea (the Republic of)

Beyond Grids: Scalable and Precise PDN Impedance Prediction via Multi-Task Graph Neural Networks
Keunwoo Kim, Junghyun Lee, Byeongmok Kim, Youngsu Yoon, Haeseok Suh, Joungho Kim
Korea Advanced Institute of Science and Technology, Korea (the Republic of)

Physics-Aware Tensor Learning for Data-Efficient Multi-Port Power Distribution Network Analysis
Junghyun Lee, Hyunjun An, Seungjae Lee, Keunwoo Kim, Youngsu Yoon, Byeongmok Kim, Haeseok Suh, Junho Park, Jaegeun Bae, Chaemin Yang, Gwantaek Lee, Joungho Kim
Korea Advanced Institute of Science and Technology, Korea (the Republic of)

Holistic Optimization of Package Substrates in Multiple Power Domain 3D-ICs using Hierarchical Reinforcement Learning
Seunghun Ryu[1], Seonghi Lee[1], Sanguk Lee[1], Hyunwoo Kim[1], Dongryul Park[1], Jinwook Lee[1], Seokbeom Yong[2], Sangsub Song[2], Seungyoung Ahn[1]
[1]Korea Advanced Institute of Science and Technology, Korea (the Republic of); [2]Samsung Electronics Co Ltd, Korea (the Republic of)

Graph Attention Network based Reinforcement Learning (GAT-RL) for Spiral Through-Silicon Via Placement Optimization in HBM considering Power Noise and Crosstalk Reduction
Youngsu Yoon, Joonsang Park, Keunwoo Kim, Seonguk Choi, Junghyun Lee, Hyunjun An, Jiwon Yoon, Haeseok Suh, Byeongmok Kim, Junho Park, Jaegeun Bae, Joungho Kim
Korea Advanced Institute of Science and Technology, Korea (the Republic of)

PDN Design Agent Auto-Modeling Framework with BO-Based Hyperparameter Optimization for Multi-Package DRAM Modules
Jaeyoung Shin[1,2], Jonghoon Kim[1], HyunJoon Jeong[2], Sunghoon Chun[1], SoYoung Kim[2]
[1]Samsung Electronics Device Solutions, Korea (the Republic of); [2]Sungkyunkwan University - Natural Sciences Campus, Korea (the Republic of)

The following information is preliminary and subject to change.

TC10_14 TECHNICAL PAPERS

FILTERS & STANDARDS

8:30 AM - 10:00 AM

Room: Cortez A

Sponsored by TC-10 Signal and Power Integrity

Chair:
Giorgi Maghlakelidze, *NVIDIA Corp*

PLANNED SPEAKERS & TOPICS

Impedance-Optimized Channel Design for High-Speed Unterminated UCIe Interconnects
Yijia Ni, Li Zhang, Zhiyuan Cheng, Qiang Cui, Haitao You
Zhejiang University, China

Design of an Adjustable Multi-Stage Common-Mode Filter (AMS-CMF) for Ultra-Wideband Noise Suppression
Jinwook Lee, Seunghun Ryu, Sanguk Lee, Jaewon Rhee, Seungyoung Ahn, Jiseong Kim
Korea Advanced Institute of Science and Technology, Korea (the Republic of)

The Impact Of Differential Mode to Common Mode Current Conversions On The Radiated EMI From Digital Interconnects And Satellite Payloads
David Norte
BAE Systems, Inc., USA

The following information is preliminary and subject to change.

TC10_15 TECHNICAL PAPERS

DATA ANALYSIS METHODS

1:30 PM - 3:00 PM

Room: Cortez A

Sponsored by TC-10 Signal and Power Integrity

Chair:
Junyong Park, *Kyung Hee University*
Co-Chairs:
Seungtaek Jeong, *Google LLC*

PLANNED SPEAKERS & TOPICS

Signal Feature Extraction Using Pearson's Correlation Methods
Grace Jiang[1], Youjian Liu[2]
[1]Westlake High School, USA; [2]University of Colorado Boulder, USA

Robust S-Parameter Conversion from Frequency-Dependent RLGC Parameters
You-Jie Chung[1], Chiu-Chih Chou[1], Arthur Lin[2], David Chen[2]
[1]National Central University, Taiwan; [2]NVIDIA, Taiwan

Solving Linear Systems to Evaluate Harmonic Parameters by Using Wavelets, Revisited
Ileana Diana Nicolae[1], Petre-Marian Nicolae[2], Marian-Stefan Nicolae[2]
[1]Universitatea din Craiova, Romania; [2]University of Craiova, Romania

Photo by Richard Georgerian

The following information is preliminary and subject to change.

TC10_5 TECHNICAL PAPERS

POWER DELIVERY NETWORK (PDN) OPTIMIZATION

1:30 PM - 3:30 PM

Room: Cortez B

Sponsored by TC-10 Signal and Power Integrity

Co-Chairs:

Kinger Cai, *Arm Ltd*

Junyong Park, *Kyung Hee University*

PLANNED SPEAKERS & TOPICS

A Die–Package Power Integrity Model within the Trust Region for the PDN Optimization on PCBs

Ke Tao[1], Matteo Cocchini[2], Matthew S. Doyle[2], Dylan Grace[2], Samuel Connor[2], Faye E. Squires[3], Albert E. Ruehli[4], Francesco de Paulis[5], Lijun Jiang[6]

[1]Missouri University of Science and Technology, USA; [2]International Business Machines Corp, USA; [3]Missouri University of Science and Technology, USA; [4]Missouri University of Science and Technology, USA; [5]University of L'Aquila, Italy; [6]Missouri University of Science and Technology, USA

A Statistical Qualification of PDN Impedance Considering Aging and Temperature Effects on Decoupling Capacitors

Shruti Sawant[1], Faye E. Squires[2], Sam Connor[5], Matthew S. Doyle[6], Matteo Cocchini[8], Dylan Grace[7], Francesco de Paulis[3], Lijun Jiang[4]

[1]Missouri University of Science and Technology, USA; [2]Missouri University of Science and Technology, USA; [3]University of L'Aquila, Italy; [4]Missouri University of Science and Technology, USA; [5]IBM, USA; [6]IBM, USA; [7]IBM, USA; [8]IBM, USA

Design-Rule Aware Pre-Layout Resource Evaluation and Planning for Power Delivery Networks

Sandesh Paudel, Lijun Jiang

Missouri University of Science and Technology, USA

Behavioral Model of Rapid Load-transient Response in a Multiphase Voltage Regulator Module

Jiahuan Huang[1], Hanyu Zhang[2], Hanfeng Wang[3], Wei Shen[3], Lihui Cao[3], Seungtaek Jeong[4], Chulsoon Hwang[5]

[1]Missouri University of Science and Technology, USA; [2]Missouri University of Science and Technology, USA; [3]Google Inc, USA; [4]Google LLC, USA; [5]Missouri University of Science and Technology, USA

The following information is preliminary and subject to change.

TC10_6 TECHNICAL PAPERS

TRANSMISSION LINE PHYSICS & ROUTING

10:30 AM - 12:00 PM

Room: Cortez A

Sponsored by TC-10 Signal and Power Integrity

Co-Chairs:

Junyong Park, *Kyung Hee University*

Kinger Cai, *Arm Ltd*

PLANNED SPEAKERS & TOPICS

Serpentine Traces Can be Faster Than Straight: Measurements, Physical Explanations, and Implications for High Speed PCB Design

Sean S. Hwang, Kevin Cai, Dongxu Fu, Kai Li, Yan Li, Bidyut Sen

Cisco Systems Inc, USA

A Study on The Influence of Woven Material Variation on Signal Integrity Characteristics

ChangChih Liu

TUC, Taiwan

Effects of Modal Phase-Velocity Mismatch on Signal Skew Compensation in a Differential Pair

Dong Jae Go[1], Byung cheol Min[1], Mun Ju Kim[1], Abhijit Wander[2], Raheeq Darweesh[2], Kang wook Kim[1]

[1]Kyungpook National University, Korea (the Republic of); [2]Amphenol FCI Connectors Singapore Pte Ltd, Singapore

DALLAS FUN FACTS

COWBOY BOOTS!

Cowboy boots were officially designated the state footwear of Texas in 2007, a nod to their deep roots in the state's history and identity. After the Civil War, cattle ranching became a major part of life in Texas, and ranchers needed durable, practical footwear that worked both on the ground and in the saddle. That need sparked the creation of the cowboy boot—sturdy, comfortable for long hours on horseback, and easy to slip on and off. Today, you'll spot cowboy boots in every corner of Texas, a timeless symbol woven into everyday life.

The following information is preliminary and subject to change.

TC10_7 TECHNICAL PAPERS

EMC, RADIATION & SHIELDING

8:30 AM - 10:00 AM

Room: Cortez B

Sponsored by TC-10 Signal and Power Integrity

Co-Chairs:

Lirim Koraqi, *Katholieke Universiteit Leuven*
Daniel Commerou, *Missouri University of Science and Technology*

PLANNED SPEAKERS & TOPICS

Modelling of PCB Radiation Mechanisms and High Speed Digital Interconnects in Complex EMC Environments
Conor McKeever[1], Paul Bremner[1], Weitao Dai[1], Eric Bogatin[2]
[1]Robust Physics, USA; [2]University of Colorado Boulder, USA

The Effectiveness of RF Absorption Materials
Tao Wang[1], Ann Gao[1], Brian Brecht[2]
[1]DIS Tech, USA; [2]DIS Tech, USA

Resistance Matrix Modeling of Radiation Emission and Susceptibility of Multi-conductor Transmission Lines in Reverberant Enclosures
Weitao Dai[2], Paul Bremner[1], Conor McKeever[1], Eric Bogatin[3]
[1]Robust Physics, USA; [2]Robust Physics, USA; [3]University of Colorado Boulder, USA

The following information is preliminary and subject to change.

TC10_8 TECHNICAL PAPERS

SIMULATION & MATHEMATICAL MODELING

10:30 AM - 12:00 PM

Room: Cortez B

Sponsored by TC-10 Signal and Power Integrity

Co-Chairs:

Hanfeng Wang, *Google Inc*
Daniel Commerou, *Missouri University of Science and Technology*

PLANNED SPEAKERS & TOPICS

Progress in Decompositional Electromagnetic Analysis of Digital Interconnects
Yuriy Shlepnev
Simberian Inc., USA

SEE: Fast and Accurate Transient Simulation and Eye Diagram Prediction for Non-Linear High-Speed Signaling Systems via Word-Level Waveform Stitching and Dynamic Programming
Karthik Aadithya, Pranita Kerber, Ian Timmins
Sandia National Laboratories, USA

IBIS-AMI Modeling of Re-Driver Circuits via Deconvolution-Based Impulse Response Extraction
Sanguk Lee[1], Seonghi Lee[1], Zhiping Yang[3], Hyunwoo Kim[1], Seungyoung Ahn[1], Chulsoon Hwang[2]
[1]Korea Advanced Institute of Science and Technology, Korea (the Republic of); [2]Missouri University of Science and Technology, USA; [3]PCB automation, USA

Photo by Richard Georgerian

The following information is preliminary and subject to change.

TC12_1 TECHNICAL PAPERS

WIRELESS EMC (II): IMMUNITY, COEXISTENCE & ENVIRONMENTAL EFFECTS

8:30 AM - 10:00 AM

Room: Coronado D

Sponsored by TC-12 EMC for Emerging Wireless Technologies

Co-Chairs:

Gang Feng, *Fidus Systems*
Wenchang Huang, *Missouri University of Science and Technology*

PLANNED SPEAKERS & TOPICS

Radiated Immunity Enhancement Techniques For Wireless Rechargeable Energy Storage Systems
Saranraj Karuppuswami, Aseim Elfrgani, Md Rayhan Khan
General Motors Company, USA

Concept of Using RF Stirrers to Improve the Reading Range of RFID Systems
Krzysztof Sieczkarek[1,2], Adam Mackowiak[1], Tomasz Warzynski[1]
[1]Lukasiewicz - Poznan Institute of Technology, Poland; [2]EMC Pro, Poland

Emission Monitoring in a Radio Dynamic Zone
William Young, Patricia Larkoski, Curtis Watson, Erick Caspers, Jim Doty, Eric Powell
The MITRE Corporation, USA

Photo by Karthik Vepuri

The following information is preliminary and subject to change.

TC12_2 TECHNICAL PAPERS

WIRELESS EMC (I): RF INTERFERENCE AND DESENSE

10:30 AM - 12:00 PM

Room: Coronado D

Sponsored by TC-12 EMC for Emerging Wireless Technologies

Co-Chairs:

Harry Skinner, *Intel Corporation*
Chaofeng Li, *Qualcomm Inc*
Jiahuan Huang, *Missouri University of Science and Technology*

PLANNED SPEAKERS & TOPICS

Multi-Layer Frequency-Selective Surface Design for RF Interference Mitigation
Daniel L. Commerou[1], Suho Lee[1], Jin Sub Oh[1], Victor Khilkevich[1], Yuanzhuo Liu[2], Rohit Sammeta[2], Jagan Rajagopalan[2], Chulsoon Hwang[1]
[1]Missouri University of Science and Technology, USA; [2]Amazon.com Inc, USA

PMIC-Induced RF Desensitization Analysis in A Remote Device
Wenchang[1], Shengxuan Xia[2], Xuechen Huang3, Faizal Sainal Abdeen[3], Guanggiang Jiang[3], Chulsoon Hwang[4]
[1]Missouri University of Science and Technology, USA; [2]Missouri University of Science and Technology, USA; [3]Axonics Inc, USA; [4]Missouri University of Science and Technology, USA

Intermodulation Effects of Devices Combined with Radio Equipment – Test Procedures and Challenges According to CISPR 32 and IEC 61000-6-3
Florian Hubert[1,2], Markus W. Wohlrath[3], Thomas Zitzelsberger[4], Christian Paulwitz[5], Stephan Kloska[6], Jochen Guethe[3], Karl-Heinz Schraink[3]
[1]Siemens Healthineers AG, Germany; [2]Albert-Ludwigs-Universitat Freiburg, Germany; [3]Siemens Aktiengesellschaft, Germany; [4]TQ-Systems GmbH, Germany; [5]TDK Electronics AG, Germany; [6]Verband der Elektrotechnik Elektronik Informationstechnik eV, Germany

The following information is preliminary and subject to change.

TC2_5 TECHNICAL PAPERS

EMC MEASUREMENTS - PCB LEVEL ASSESSMENTS

10:30 AM - 12:00 PM

Room: Coronado A

Sponsored by TC-2 EMC Measurements

Chair:
Monrad Monsen, *Oracle*

PLANNED SPEAKERS & TOPICS

High-Frequency PDN Characterization of a PCB using Optical Isolation up to 1 GHz frequency
Aishwarya Gavai[1,2], Jan C. Hansen[3]
[1]Indian Institute of Science Division of Interdisciplinary Sciences, India; [2]Mercedes-Benz Research and Development India Private Limited, India; [3]Technical University of Graz Institute of Electronics, Austria

An Approach for Current Source Reconstruction in Underdetermined Conducted EMI Systems via Null-Space Completion
Aishwarya Gavai[1,2], Jan C. Hansen[3]
[1]Indian Institute of Science Division of Interdisciplinary Sciences, India; [2]Mercedes-Benz Research and Development India Private Limited, India; [3]Technical University of Graz Institute of Electronics, Austria

Measured Crosstalk Induced Onto UTP Circuits Fom Patch Heaters
David Norte
BAE Systems, Inc., USA

The following information is preliminary and subject to change.

TC2_8 TECHNICAL PAPERS

EMC MEASUREMENTS - IMPEDANCE MEASUREMENTS AND PROBES

2:00 PM - 3:30 PM

Room: Coronado A

Sponsored by TC-2 EMC Measurements

Chair:
Monrad Monsen, *Oracle*

PLANNED SPEAKERS & TOPICS

Analysis of the Hereward Active Current Probe Employing Bifilar Feedback and Sense Windings
James McLean
TDK R&D Corp., USA

Impedance measurement of a High Voltage (HV) Battery Pack in an Electrified Vehicle
Nitin Parsa, Ahalya Srikanth, Eric Poirier, Varittha Sanphuang, Ronald Missier
Ford Motor Company, USA

Measurement Characterization of a Pair of CISPR25-Compliant HV LISNs
Chiu-Chih Chou[1], Yu-Sheng Li[2], Ying-Fan Chen[4], Tzong-Lin Wu[3]
[1]National Central University, Taiwan; [2]National Taiwan University, Taiwan; [3]National Taiwan University, Taiwan; [4]Delta Electronics Inc, Taiwan

Photo by Richard Georgerian

The following information is preliminary and subject to change.

TC4_2 TECHNICAL PAPERS

EMI CONTROL: FILTERING, SHIELDING, ABSORBER

2:00 PM - 3:30 PM

Room: Coronado B

Sponsored by TC-4 Electromagnetic Interference Control

Chair:
Lirim Koraqi, *Katholieke Universiteit Leuven*
Co-Chair:
Charles Jullien, *Safran Electrical and Power*

PLANNED SPEAKERS & TOPICS

A Space-Efficient Common-Mode Noise Filter Integrated Within BGA Pad Structures for PCIe Gen 5/6 Applications
Junsik Park, Chunghyun Ryu, Nam-Su Kim, Byungjin Bae, Sunghoon Chun
Samsung Electronics Co Ltd, Korea (the Republic of)

CAE based Methodology to Evaluate Shielding Effectiveness of High Voltage shielded connectors
Varittha Sanphuang, Ahalya Srikanth, Nitin Parsa, Ronald Missier
Ford Motor Company, USA

Experimental Study of Average Absorption Cross Section Measurement Linearity and Sensitivity in a Reverberation Chamber
Mehmet F. Cengiz[1], Robert Vogt-Ardatjew[2], Niek Moonen[2], Frank Leferink[2]
[1]Universiteit Twente, Netherlands; [2]Universiteit Twente, Netherlands

The following information is preliminary and subject to change.

TC5_3 TECHNICAL PAPERS

FILTERS AND ARRESTERS FOR ELECTROMAGNETIC PULSE PROTECTION

8:30 AM - 10:00 AM

Room: Coronado A

Sponsored by TC-5 High Power Electromagnetics

Chair:
Michael McInerney, *Consultant*
Co-Chair:
William Radasky, *Metatech Corporation*

PLANNED SPEAKERS & TOPICS

Using Common Mode Three Phase Power Filters for HEMP Mitigation
Sergio Longoria
ETS-Lindgren, USA

Circuit Modeling of Granular Metal Arresters for Nanosecond Transients
Tyler Bowman, Matthew Landi, Laura Biedermann
Sandia National Laboratories, USA

Practical Application of Physics-Based TVS Models
Yejun Kim[1], Daniel Szanto[1], Tingyu Shi[1], Mehdi Mousavi[1], Sergej Bub[2], Steffen Holland[2], Daryl Beetner[1]
[1]Missouri University of Science and Technology, USA; [2]Nexperia BV, Netherlands

DALLAS FUN FACTS

FORTH WORTH, TEXAS: A HIDDEN GEM

Fort Worth, TX blends Western heritage with modern energy, creating a city that feels both historic and forward-looking. Often called the "City of Cowboys and Culture," it's known for its renowned museums, vibrant arts community, lively downtown districts, and unmistakable Texas character. As the fifth-largest city in the state, Fort Worth offers everything from rodeos and live music to acclaimed cuisine and world-class cultural attractions, making it an ideal place to experience the spirit of the West.

The following information is preliminary and subject to change.

TC7_1 TECHNICAL PAPERS

EMI IN ELECTRIFIED TRANSPORT

8:30 AM - 10:00 AM

Room: Cortez C

Sponsored by TC-7 Electrical Systems and Power Electronics EMC

Chair:
Petre-Marian Nicolae, *University of Craiova*
Co-Chair:
Cong Li, *GE Aerospace*
Niek Moonen, *Universiteit Twente*

PLANNED SPEAKERS & TOPICS

Transfer Function Methodology for Shaft-based Emissions in Electrified Vehicles
Nitin Parsa, Varittha Sanphuang, Ronald Missier, Keith Frazier
Ford Motor Company, USA

Subsystem Level EMI Simulation for Automotive Applications
Aasiya Sameen[1], Shamba Mitra[1], Nikita Ambasana[1], Suchetha Pittala[1], Surender Elumalai[3], Jay Pandya[3], Arun Nair[3], Anjay Prasad[3], Jan C. Hansen[2], Bibhu P. Nayak[2]
[1]Simyog Technology Pvt. Ltd, India; [2]Graz University of Technology, Austria; [3]Mercedes-Benz Research and Development India Private Limited, India

Modeling and Evaluation of Conducted and Radiated Interference from Pantograph-Catenary Arcs at High-Speed Railway Electric Phase Division
Ke Huang, Yang Yang, Feng Zhu
Southwest Jiaotong University, China

The following information is preliminary and subject to change.

TC7_2 TECHNICAL PAPERS

DATA CENTER AND POWER ELECTRONICS EMC

10:30 AM - 12:00 PM

Room: Cortez C

Sponsored by TC-7 Electrical Systems and Power Electronics EMC

Chair:
Petre-Marian Nicolae, *University of Craiova*
Co-Chair:
Cong Li, *GE Aerospace*
Niek Moonen, *Universiteit Twente*

PLANNED SPEAKERS & TOPICS

Return Current Distribution Challenges and EMC Implications in Open Rack Architectures
Mehdi Mechaik
TE Connectivity Corporation, USA

Multiphysics Electromagnetic 3D Analysis of Full-Rack Busbar Assembly For AI Data Centers
Shahid Ahmed, Mehdi Mechaik, Hal Loket, Cody Grimshaw, Howard Heck, Sajjad Ahmed
TE Connectivity Corporation, USA

A One-Stage Numerical Integration Method for EMT Simulations of Power Electronic Converters
Yohei Tanaka, Yoshihiro Baba
Doshisha Daigaku, Japan

Photo by Richard Georgerian

The following information is preliminary and subject to change.

TC9_6 TECHNICAL PAPERS

MODELING AND SIMULATION OF NONLINEAR, MULTIPHYSICS, AND DATA-DRIVEN EMC SYSTEMS

1:30 PM - 3:00 PM

Room: Coronado D

Sponsored by TC-9 Computational Electromagnetics

Chair:
Shaowu Huang, *Palo Alto Networks Inc*
Co-Chair:
Shengxuan Xia, *Missouri University of Science and Technology*

ABSTRACT:

This session brings together advanced modeling and simulation techniques for electromagnetic compatibility (EMC), spanning multiphysics, nonlinear system behavior, and AI-assisted approaches. It covers matrix-free time-domain co-simulation and coupled electromagnetics with thermal and mechanical effects, including Lorentz-force-induced PCB vibration. The session also addresses nonlinear EMC phenomena in power electronic systems through physics-based SPICE modeling of switching dynamics and susceptibility in BLDC motor drives. In addition, it explores data-driven methods such as deep learning for RF safety prediction. Overall, the contributions highlight the growing importance of integrated, multiphysics, and AI-enhanced methodologies for accurate EMC analysis and design.

PLANNED SPEAKERS & TOPICS

A Nonlinear Circuit Modeling Framework for EM Susceptibility Analysis of BLDC Motor Drives
Samuel Jung[1], Adam Tsouchlos[1], Praveen Madan[1], Jacob Johnson[1], Zhen Peng[2]
[1]University of Illinois Urbana-Champaign, USA; [2]University of Illinois at Urbana-Champaign, USA

Auto-Tuning/Fitting of Diode SPICE Models for SEED Simulations
Daniel Szanto[1], Tingyu Shi[4], Mehdi Mousavi[3], Jianchi Zhou[2], Narayana Balu[2], Jing Zhou[2], Darryl Kostka[2], Daryl Beetner[3]
[1]Missouri University of Science and Technology, USA; [2]Apple Inc, USA; [3]Missouri University of Science and Technology, USA; [4]Missouri University of Science and Technology, USA

A Multiphysics Approach for Simulating Lorentz Force Induced Vibration in PCBs
Tianze Kan, Sameer Jape
Synopsys Inc, USA

Photo by Richard Georgerian

The following information is preliminary and subject to change.

WT_D3 TUTORIAL

ELECTROMAGNETIC SHIELDING: BRIDGING DESIGN, CHARACTERIZATION, AND STANDARDS

8:30 AM - 12:00 PM

Room: Cortez B

Sponsored by TC-4 Electromagnetic Interference Control

Chair:
Lirim Koraqi, *Katholieke Universiteit Leuven*
Co-Chair:
Pavithrakrishnan Radhakrishnan, *Oklahoma State University*

ABSTRACT:

The increasing integration of power electronics, high-speed digital systems, sensors, and communication technologies in modern engineering applications is intensifying electromagnetic interference (EMI) challenges across a wide frequency range. From low-frequency (LF) magnetic fields generated by power conversion systems to high-frequency (HF) radiated emissions affecting sensitive electronics, electromagnetic disturbances pose growing risks to system performance, reliability, and safety. As electronic systems become increasingly compact and functionally dense, electromagnetic shielding has become a critical design element for ensuring electromagnetic compatibility (EMC) across a wide range of applications, including transportation, industrial automation, aerospace, and medical systems.

This tutorial provides a unified perspective on electromagnetic shielding in modern electronic systems. It addresses the optimization of shielding in complex, highly integrated platforms by examining EMC challenges and practical design strategies. Widely used shielding elements, such as cables, are discussed with emphasis on how shielding effectiveness (SE) is characterized in practice and how the measurement setup influences the resulting SE values. The tutorial further addresses the challenges of reliably characterizing LF magnetic shielding under near-field conditions, the use of electromagnetic absorber materials to enhance enclosure-level shielding, and an overview of relevant shielding standards and their role in ensuring reliable and reproducible characterization. Active EMI mitigation techniques applicable to such systems are also introduced, thereby completing the link between shielding design, characterization, and standards across a broad range of applications. In addition, the integration of the Safe-and-Sustainable-by-Design (SSbD) approach into shielding solutions is discussed, focusing on key factors such as electromagnetic safety, weight, volume, mechanical strength, and cost.

The tutorial also presents contributions from the Doctoral Network (DN) PARASOL project, funded by the Marie Skłodowska-Curie Actions (MSCA) under the Horizon Europe (HE) framework. These contributions illustrate a multidisciplinary approach that integrates EMC materials engineering, system safety engineering, and SSbD principles in the development of electromagnetic shielding solutions.

PLANNED SPEAKERS & TOPICS

Cable Shielding Measurements: From a Simple Setup to a More Complex One
Charles Jullien
Safran Electrical and Power, France

Effect of Absorber Materials on the Shielding Effectiveness of Enclosures
Mehmet F. Cengiz
Universiteit Twente, Netherlands

Overview of Recent IEEE Shielding Standards
Pavithrakrishnan Radhakrishnan
Oklahoma State University, USA

Understanding EMC Challenges in Electric Mobility: Shielding and High-Frequency Noise
Karen Burnham
EMC United, USA

Toward Accurate Low-Frequency Shielding Characterization of Planar Materials
Lirim Koraqi
Katholieke Universiteit Leuven, Belgium

Areas of EMI/EMS Improvements Applicable to Capacitive Touch Applications
Subramaniam S. Sankar
Univerzita Tomase Bati ve Zline, Czechia

The following information is preliminary and subject to change.

WT_D4 WORKSHOP

SIGNAL AND POWER INTEGRITY TRADE-OFFS IN GLASS-BASED AI SERVER PACKAGES WITH UCIE AND CO-PACKAGED OPTICS FOR ENERGY-EFFICIENT SYSTEMS

1:30 PM - 5:00 PM

Room: Cortez C

Sponsored by TC-9 Computational Electromagnetics

Chair:
Satoru Kuramochi, *Dainippon Insatsu Kabushiki Kaisha*

ABSTRACT:

This workshop focuses on signal and power integrity challenges in heterogeneous AI server packages using glass substrates. As high-speed SERDES PCIe links are required to operate well into the tens of gigahertz, the choice of interconnect structure becomes a critical design factor.

A comparative study using insertion loss data up to 40 GHz is presented for metallized through-glass vias (TGVs) and GSG coplanar transmission line structures. The results illustrate the impact of glass substrate architecture on high-speed signal transmission and highlight key differences between Glass Core Substrate and Glass Interposer approaches.

Through practical comparison and discussion, participants will gain insight into SI trade-offs, interconnect selection, and package-level design considerations for energy-efficient AI server systems with co-packaged optics.

PLANNED SPEAKERS & TOPICS

Signal and Power Integrity Trade-offs in Glass-Based AI Server Packages with UCIe and Co-Packaged Optics for Energy-Efficient Systems
Satoru Kuramochi
Dainippon Insatsu Kabushiki Kaisha, Japan

Development of Glass Core Multi-Layer-Buildup Substrate with TGV
Shingo Hayashibe
Shinko Electronics, Japan

Metallization Technology of Glass Core Substrates for Reliable Power Delivery in AI Packages
Tomoya Sawada
OKUNO CHEMICAL INDUSTRIES, Japan

Power Integrity Analysis of Glass-Based AI Server Packages: TGV Length Effects and Core vs. Interposer Comparison
Hiroki Sakata
DNP America, USA

Laser-Based Manufacturing Technologies: Enabling Glass-Based AP and CPO
Nils Anspach
LPKF Laser & Electronics SE, Germany

DALLAS FUN FACTS

SKY VIEWS IN THE REUNION TOWER

See the spectacular views of the city from Dallas's Reunion Tower. Built in 1978, the 470ft tower contains 259 exterior LED lights to shine in the night and bring the Dallas skyline to life. Full meals are offered within the sphere at the 2024 and 2025 Michelin recommended restaurant, Crown Block, with floor-to-ceiling windows and seating over 200.

The following information is preliminary and subject to change.

WT_D5 TUTORIAL

LESSONS LEARNED FOR HIGH VOLTAGE ELECTRICAL SYSTEMS IN AVIATION

8:30 AM - 5:00 PM

Room: Coronado C

Sponsored by TC-7 Electrical System and Power Electronics EMC, TC-8 Aeronautics and Space EMC

Chair:
Cong Li, *GE Aerospace*
Co-Chair:
Niek Moonen, *Universiteit Twente*

ABSTRACT:

This EMC tutorial is part of the IEEE EMC Society REACHES (Roadmap for EMC in Aerospace High-voltage Electrical Systems) initiative, jointly sponsored by IEEE EMCS TC7 (Electrical System and Power Electronics EMC) and TC8 (Aeronautics and Space EMC).

As the aviation industry transitions toward More Electric Aircraft (MEA) and hybrid-electric propulsion, the integration of high-voltage (HV) systems introduces unprecedented Electromagnetic Compatibility (EMC) challenges. Driven by the urgent need to reduce atmospheric emissions, these propulsion technologies demand significantly higher power levels. This shift necessitates optimal source placement and energy management, alongside the optimization of wiring harnesses to maintain system efficiency. Increased currents and voltages directly impact cable sizing, insulation, and connection systems—factors that significantly increase overall system mass and generate higher radiated electromagnetic fields that pose risks to sensitive equipment.

This tutorial provides a comprehensive examination of lessons learned from recent aviation electrification projects. It addresses critical issues such as high-speed switching noise from motor controllers, HV cable insulation degradation, and the evolving requirements of RTCA DO-160G (and the upcoming DO-160H) and MIL-STD-461G for HV architectures. Attendees will gain insights into advanced filtering, shielding strategies, and the emerging capabilities required of modern EMC test labs to validate these high-power systems. By bridging the gap between theoretical EMC principles and practical airframer experiences, this session offers a roadmap for achieving airworthiness in the next generation of electrified flight.

PLANNED SPEAKERS & TOPICS

Overview of Today's Aviation Electrification EMC Challenges and Motivation for Advanced Technologies
Cong Li[1], Niek Moonen[2]
[1]GE Aerospace, USA; [2]Universiteit Twente, Netherlands

DO-160G & MIL-STD-461G Considerations for New HV Aviation Systems
Finbarr O'Connor[2], Daren Nerad[1]
[1]Wisk Aero, USA; [2]Huntington Ingalls Industries Inc, USA

Lessons Learned from HV system Integration and Flight Testing
Daren Nerad
Wisk Aero, USA

EMC of Power Chain Equipment
Charles Jullien
Safran Electrical and Power, France

Monitoring HV Cable Insulation Degradation and Electrical Phenomenon in Aerospace
Charles Jullien
Safran Electrical and Power, France

Crosstalk Analysis from HV Powerlines to Existing (Data) Networks
Jesper Lansink Rotgerink
Royal NLR - Netherlands Aerospace Centre, Netherlands

Advanced EMC Filter Designs and Shielding for MW-scale Systems
Fang Luo
Stony Brook University, USA

HVDC Bus Transient Testing – What to Consider for Military and Aircraft Applications
Craig Fanning
Elite Electronic Engineering, Inc., USA

Simulation Analysis of Wave Propagation for Parallel-Plate Box [PPB] Method for EMC
Gary Biddle
Samtec Inc, USA

The following information is preliminary and subject to change.

WT_D6 WORKSHOP

5G AND FRONTIERS OF MEDICAL DEVICES

8:30 AM - 12:00 PM

Room: Coronado B

Chair:
Susanna Mosleh, *National Institute of Standards and Technology*
Chair:
Mohamad Omar Al Kalaa, *Inovectrum*

ABSTRACT:

Emerging 5G deployments are changing the RF environment in which medical devices operate and, in some cases, exposing them to new coexistence and electromagnetic compatibility (EMC) issues that are not well covered by common immunity and wireless coexistence verification profiles. As hospitals roll out private cellular, indoor small cells, distributed antenna systems, and new 5G-enabled workflows, medical equipment may operate in denser, more dynamic spectra and be even closer to emitters than many legacy assumptions reflect. This workshop ties what's being deployed in and around hospitals to the failure mechanisms we may observe when testing and debugging devices, with an emphasis on building test setups that are repeatable in the lab and still representative of clinical use. The workshop will also address emerging 5G connectivity paths used for remote and mobile care and what they imply for coexistence, immunity testing, and compliance evidence.

We will bring together medical device EMC/coexistence engineers, test labs, wireless and system engineers, device manufacturers, and regulators for a technical discussion of what is changing, where failures tend to hide, and how to validate robustness without over-testing or chasing unrealistic cases.

PLANNED SPEAKERS & TOPICS

Connecting the Dots Between Mobile Communication Standards and Medical Device EMC
Mohamad Omar Al Kalaa
Inovectrum, USA

5G Emerging Technologies and EMC Performance for Medical Devices (IEC 60601-1-2:2020)
Bob DeLisi
UL LLC, USA

The Challenges of Immunity Testing Against 5G NR Threats
David Schaefer
Element Materials Technology, USA

The Digital Common Ground of Tomorrow
Phillip Miller
RATLR, USA

5G in Hospital Environments: EMC, Coexistence, and Practical Considerations for Medical Devices
Segun Adeniji
Philips Medizin Systeme Boblingen GmbH, Germany

Photo by Richard Georgerian

The following information is preliminary and subject to change.

WT_M3 WORKSHOP

NANOTECHNOLOGY AND ADVANCED MATERIALS FOR AEROSPACE EMI/EMC/E3

8:30 AM - 5:00 PM

Room: Coronado D

Sponsored by TC-11 Nanotechnology and Advanced Materials, TC-8 Aeronautics and Space EMC

Chair:
Marina Koledintseva, *The Boeing Company, Saint Louis, MO*
Co-Chair:
Nika Amralah, *Department of National Defence*

ABSTRACT:

Currently, there is a lot of interest in design and application of nanomaterials and various advanced materials for aerospace technology. These materials allow for solving numerous problems in Aerospace Engineering, including electromagnetic interference (EMI) control, electromagnetic compatibility (EMC) at the system level, and protection against various electromagnetic environmental effects (E3). In this Workshop, presentations will focus on physics, technology, characterization, and EMI/EMC/E3 applications of new advanced materials, including nanomaterials, metamaterials, advanced magnetic materials, and various composites. Such novel materials with advanced electromagnetic, mechanical, thermal and other important for aerospace engineering properties are perspective for design of EMI shielding and filtering structures, as well as various electromagnetic wave absorbers.

PLANNED SPEAKERS & TOPICS

Fundamentals on Electromagnetic Absorbing and Shielding Materials for Aerospace Applications
Paul Dixon
Qnity Electronics, USA

New Methods in Electromagnetic Materials Characterization: Computational EM Inversion with Specialized Probes
John W. Schultz
Compass Technology Group, USA

Materials and Structural Design of Polymer Composite Absorbers for Aerospace EMC
Dandan Zhang
University of Michigan, USA

3D Printed Materials Characterization for Aerospace EMC
Victor Khilkevich
Missouri University of Science and Technology, USA

Silicones for Highly Demanding Applications in Aerospace, Aviation and Defense
Julia Sunderland
The Dow Chemical Company, USA

Analysis of Fabric over Foam (FoF) Gasket Parameters on SE from 30 MHz to 40 GHz
Pavithrakrishnan Radhakrishnan
Oklahoma State University, USA

Ferrite- and Ferromagnetic-Based Materials in Aerospace EMI and EMC
Marina Y. Koledintseva
The Boeing Company, Saint Louis, MO, USA

Superconductive Transmission Lines in Earthbound Aerospace Applications with Insights on Skin – Effect Electromagnetic Issues
Clifford M. Krowne
Ashlawn Energy, USA

The following information is preliminary and subject to change.

WT_02 WORKSHOP

EMI/EMC SIMULATION AND DIAGNOSIS METHODOLOGY IN SEMICONDUCTOR DESIGN PROCESS FLOW

8:30 AM - 12:00 PM

Room: Cortez C

Chair:
Rajen Murugan, *Texas Instruments, Inc.*
Co-Chair:
Dipanjan Gope, *Simyog Technology*

ABSTRACT:

EMI/EMC issues drive approximately 30% of verification-stage failures, representing billions in lost revenue across the electronics industry. The traditional compliance approach—building physical prototypes for laboratory testing—creates expensive re-design cycles, market delays, and significant business risk. Progressive semiconductor companies are now leveraging simulation-based methods to identify and resolve EMC issues early in the integrated circuit product design process.

This tutorial delivers a proven simulation and diagnosis framework for achieving first-pass EMI/EMC compliance while minimizing system-level failures. Core topics include:

- Conducted Emission (CISPR25 CE Voltage and Current Method)
- Radiated Emission (CISPR25 RE)
- Bulk Current Injection (ISO-11452-4 open and closed-loop)
- Radiated Immunity (ISO-11452-2)

PLANNED SPEAKERS & TOPICS

Need for Digital EMI/EMC Front-Loading in Semiconductor Design Process Flow
Rajen M. Murugan
Texas Instruments, Inc., USA

Conducted and Radiated Emission Modeling and Simulation for power Semiconductor Devices
Jie Chen
Texas Instruments Inc, USA

BCI and Radiated Immunity Model-based Analysis for Semiconductor Devices
Nikita Ambasana
Simyog Technology, India

Future Directions in Model-based Simulation Methodology for Semiconductor Design Process
Dipanjan Gope
Simyog Technology, India

Photo by Richard Georgerian

The following information is preliminary and subject to change.

WT_04 WORKSHOP

ADVANCES IN COMPUTATIONAL ELECTROMAGNETICS FOR SIGNAL AND POWER INTEGRITY ANALYSIS OF MULTI-DIE 2.5D/3D IC PACKAGES

8:30 AM - 12:00 PM

Room: Coronado A

Sponsored by TC-9 Computational Electromagnetics

Chair:
Feng Ling, *Xpeedic*
Co-Chair:
Vladimir Okhmatovski, *University of Manitoba*

ABSTRACT:

The rapid adoption of 2.5D/3D integration, chiplet-based architectures, and advanced packaging technologies has fundamentally transformed the landscape of signal integrity (SI), power integrity (PI), and electromagnetic compatibility (EMC). The introduction of dense interposers, through-silicon vias (TSVs), micro-bumps, high-bandwidth memory (HBM), and ultra-short die-to-die interconnects has pushed electromagnetic interactions into regimes where traditional modeling assumptions and design abstractions are no longer adequate.

Addressing these emerging challenges increasingly requires advanced computational electromagnetics (CEM) methods that are both rigorous and scalable, capable of handling large, multi-scale, and multi-physics systems while remaining compatible with practical design workflows. Recent progress in full-wave solvers, fast algorithms, domain decomposition, and model order reduction has opened new opportunities to bridge fundamental EM theory with system-level SI/PI analysis in complex multi-die environments.

This workshop brings together leading researchers from academia (University of Manitoba, Ghent University, Missouri University of Science and Technology) and experts from industry (Intel) as well as EDA tool developers (Cadence, Xpeedic, CEMWorks) to present and discuss recent advances in computational electromagnetics and their applications to signal and power integrity analysis of multi-die 2.5D/3D IC packages. Topics will span from numerical methods and modeling techniques to real-world design case studies, with an emphasis on translating EM rigor into actionable engineering insight. The workshop aims to foster cross-disciplinary dialogue and to identify open challenges and future research directions at the intersection of computational EM, SI/PI, and advanced system integration.

PLANNED SPEAKERS & TOPICS

Recent Challenges and Solutions for Electromagnetic Modeling of Advanced Packages
Zhichao Zhang
Intel, USA

Machine Learning Models for Signal and Power Integrity Analysis in Advanced IC Package Design
Xiaoyan Xiong
Cadence, USA

Integral-Equation-Based EM Solver for Signal Integrity Analysis in 2.5D/3D Advanced Packaging
Jonatan Aronsson
CEMWorks Inc., Canada

Single-Source DSA-EFIE Techniques for Broadband Lossy Interconnect Modeling
Martijn Huynen
Ghent University, Belgium

Uncertainty Characterization for Power Integrity and Signal Integrity
Lijun Jiang
Missouri University of Science and Technology, USA

Rigorous Full-Wave Analysis of Finite Dielectric Regions and Conductor Loss in 3D Interconnect Models with Surface Volume Surface Electric Field Integral Equations
Vladimir Okhmatovski
University of Manitoba, Canada

Advances in Signal and Power Integrity Analysis for Multi-Die 2.5D/3D IC Designs
Feng Ling
Xpeedic, USA

The following information is preliminary and subject to change.

WT_05 WORKSHOP

WHEN OPEN SOURCE MEETS SIPI/EMC

8:30 AM - 5:00 PM

Room: Cortez A

Sponsored by TC-9 Computational Electromagnetics

Chair:
Giorgi Maghlakelidze, *NVIDIA Corp*
Co-Chair:
Yansheng Wang, *Meta Platforms Inc*

ABSTRACT:

Open source could transform how the SIPI/EMC community collaborates, innovates, and solves design challenges. From Linux to RISC-V to much of AI development, open-source projects have proven that community-driven development delivers powerful, flexible, and cost-effective solutions. But what does this mean for signal and power integrity engineers?

This workshop explores why open source matters for our field: community support ensures you're never solving problems alone; free tools lower barriers to entry; customization lets you extend standard offerings to meet specific needs; and broader participation drives ecosystem growth and standardization.

Now in its third year, this workshop brings together maintainers, contributors, and users of open-source SIPI/EMC projects to showcase new tools and share practical insights: What motivates creators to open-source their work? How do you sustain a contributor community? How do these tools improve real-world designs?

Attendees will discover tools they can apply immediately, gain inspiration to launch their own projects, and learn how to become effective contributors.

PLANNED SPEAKERS & TOPICS

PDN Before Layout: Resource Evaluation and Feasibility Checks Under Design Rules
Sandesh Paudel, Lijun Jiang
Missouri University of Science and Technology, USA

ViaCap: Open-Source Modeling of Via Capacitance
Srinath Penugonda
Cisco Systems Inc, USA

Auto-Mate + OpenSIPI: A Trusted AI Agent for S-Parameter Extraction and Reporting
Yansheng Wang
Rivos Inc., USA

Introduction to the IEEE 802.3 Channel Operating Margin Open Source Project
Howard Heck
TE Connectivity Corporation, USA

Responsible Agentic Coding: Enabling End-to-end Open Source IEEE370 Stack with Octave-RF
Giorgi Maghlakelidze
NVIDIA Corp, USA

EMerge: A Full Wave FEM EM Solver in Python
Robert Fennis
EMerge Software, Netherlands

From Code to Product Engineering: PyAEDT Redefining SI/PI/EMC Simulation Workflows
Massimo Capodiferro
Synopsys Inc, USA

The SI/PI-Database for PCB-Based Interconnects: Why, How, and What For?
Christian Schuster
Technische Universitat Hamburg Studiendekanat Elektrotechnik Informatik und Mathematik, Germany

Open Source in SIPI/EMC: Panel Discussion
Yansheng Wang[2], Giorgi Maghlakelidze[1]
[1]NVIDIA Corp, USA; [2]Rivos Inc., USA

The following information is preliminary and subject to change.

WT_07 WORKSHOP

BENCHMARKING AND REPRODUCIBILITY IN COMPUTATIONAL AND EXPERIMENTAL CHARACTERIZATION OF ELECTRONIC PACKAGES FOR SIGNAL AND POWER INTEGRITY

1:30 PM - 5:00 PM

Room: Coronado A

Chair:
Vladimir Okhmatovski, *University of Manitoba*

ABSTRACT:

Tutorial features talks on current initiatives to form benchmarks for characterization of electronic packages. Six available benchmarks representing typical cases for signal and power integrity analysis and varying in complexity from simple microstrip line to a full package model are intended to serve as standardized cases for testing performance and accuracy of the modeling tools are discussed with emphasis on two latest benchmarks. While the benchmarks consisting of CAD model files as well as simulated and measured network parameters are publicly available and described in the accompanying manual, the emphasis in this tutoria is made on challenges encountered in creating measured data, development of modeling capabilities in the computational tools essential for accurate and expedient electromagnetic analysis of the benchmarks, and common practices going into matching of the simulated to measured data. Ongoing efforts towards standardization of densely packed interconnects for die-to-die interfacing on advanced packages also known as heterogeneous integration are also addressed.

PLANNED SPEAKERS & TOPICS

Introduction to SIPI benchmarking initiative of IEEE EPS TC-EDMS
Vladimir Okhmatovski
University of Manitoba, Canada

Evaluating Solver Performance on the IEEE EPS Benchmark Models
Jonatan Aronsson
CEMWorks Inc., Canada

New Power Integrity Benchmark for Low Impedance Structures
Istvan Novak
Samtec Inc, USA

New In-Package RF Filter Benchmark
Michael Hill
Intel, USA

Benchmark of Interconnects in Multi-Die Heterogeneous Integration System
Feng Ling
Xpeedic, USA

Photo by Richard Georgerian

The following information is preliminary and subject to change.

WT_S5 TUTORIAL

PRODUCT SAFETY ENGINEERING SOCIETY (PSES) TUTORIAL; PRODUCT SAFETY COMPLIANCE AND GLOBAL MARKET ACCESS

8:30 AM - 12:00 PM

Room: Cortez D

Chair:
Grant Schmidbauer, *British Columbia Institute of Technology*

ABSTRACT:

The goal of most companies is not to only design products to be safe, perform according to customer demands, and to meet regulatory requirements, it is to sell those products globally. While your product must comply with the EMC and SIPI requirements, there are a myriad of other technical requirement that must also be considered to facilitate the sale of the product.

The plan for this tutorial is to delve into some of the “other technical requirements” that products must comply with, including product safety requirements (ie, concepts such as fire, shock, mechanical, temperature, and radiation); and then once your products are compliant, we will discuss the commercialization of the product through obtaining the many country approvals that are needed in order to legally sell the product around the world.

This tutorial should be attended by product realization managers, design engineers, test technicians, product regulatory personnel, project managers, marketing personnel, and others interested in learning more about product safety and global market access requirements.

PLANNED SPEAKERS & TOPICS

PSES Tutorial, Compliance 101
Brunno Covolan[2], Ken Kapur[1]
[1]Thermo Fisher Scientific Inc, USA; [2]Intertek USA Inc, USA

PSES Tutorial, Compliance 201
John Allen[2], Ken Kapur[1]
[1]Thermo Fisher Scientific Inc, USA; [2]Product Safety Consulting, Inc., USA

PSES Tutorial, Global Market Access
Grant Schmidbauer
British Columbia Institute of Technology, Canada

PSES Tutorial, Open Panel Discussion
Grant Schmidbauer
British Columbia Institute of Technology, Canada

Photo by Richard Georgerian

The following information is preliminary and subject to change.

WT_V3 WORKSHOP

AUTOMOTIVE EMC: SIMULATION, MEASUREMENT, GOOD PRACTICE AND TEST IMPLEMENTATION

1:30 PM - 5:00 PM

Room: Coronado B

Chair:
Martin Wiles, *MVG World*

ABSTRACT:

This workshop on Automotive EMC covers a wide range of relevant topics on EMC for Electric Vehicles from simulation, measurement good practice and test implementation.

Automotive EMC Testing for eMobility will cover the implementation of testing for Component (eMotor and eBattery) and eVehicle level as well as EV Charger with and without vehicle.

Reverberation chambers provide fast, repeatable, wide-band EMC testing for today’s complex vehicles. They offer uniform fields, reduced setup sensitivity, and strong alignment with standards like ISO 11452-11, making them an efficient, scalable alternative to traditional EMC chambers.

P2855 is a forthcoming standard that defines how to characterize the shielding effectiveness of cable/connector assemblies from DC up to 40 GHz. It outlines recommended measurement techniques and specification methods to assess how well these assemblies control EMI and support compliance with government, regulatory, and customer EMC requirements. The workshop introduces the standard’s scope and highlights several new test methods that will be included.

Advances in computational electromagnetics are enabling Digital Twins and AI-driven simulations to play a major role in automotive EMC. The talk covers numerical simulation of key EMC issues—such as radiation, cable-harness crosstalk, and powertrain emissions—and introduces digital-twin approaches for understanding component- and vehicle-level immunity tests. It also includes simulation of CISPR standards to support more predictive, efficient EMC evaluation

Cabling is a major source of electromagnetic noise in electric vehicles and a common cause of failures in CISPR 12, 25, and 36 tests. This talk explains how cable design, routing, and shield bonding influence vehicle-level EMC performance and outlines key strategies for improving cable assemblies to meet regulatory EMC requirements.

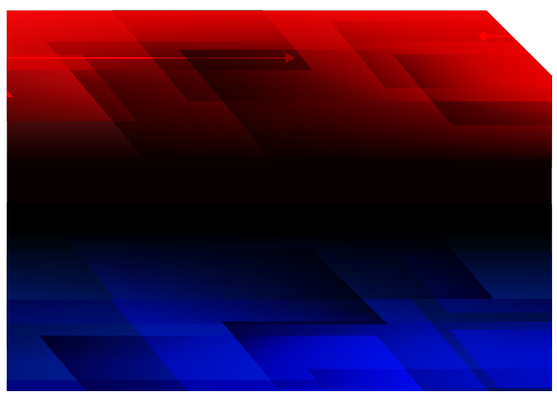
PLANNED SPEAKERS & TOPICS

Automotive EMC Testing for eMobility
Martin A. Wiles
MVG World, United Kingdom

Importance of Cabling in EMC Success for EVs
Karen Burnham
EMC United, USA

P2855, the New Standard for a Characterization of Shielding CCA from DC to 40GHz
Charles Jullien
Safran Electrical and Power, France

Enhancing Automotive EMC Testing with Reverberation Chambers
Vignesh Rajamani
Rohde & Schwarz, USA



ASK THE EXPERTS PANELS

The following information is preliminary and subject to change.

WAR STORIES FROM THE TRENCHES

AtE STAGE, EXHIBIT HALL • 1:30 PM – 3:00 PM

Organizer:
Jacob Dixon, *International Business Machines Corp, Rochester, MN, USA*
Karen Burnham, *EMC United Inc, Denver, CO, USA*

This open-mic style panel gives EMC engineers a chance to share real-world problem-solving stories from the field. The messier and more hard-won, the better. Think of it as peer-to-peer learning wrapped in a little friendly competition. The format is deliberately informal. No slides, no polished presentations, just engineers sharing the kind of stories that (usually!) only get told in hallways and over drinks, now on the stage!

With a strict 5 minute speaking limit, stories are expected to center around:

- A gnarly EMC problem encountered during design, development, or debug
- The clever or novel application of EMC principles to crack it
- Bonus points for: unexpected root causes, novel application of theory into practice, embarrassing mistakes that turned into breakthroughs, or solutions that shouldn't work in the lab, but do in real life

An award will go to the story with the most audience interest! Come one and all to learn, share, and teach!

ASK THE EXPERTS PANELS

The following information is preliminary and subject to change.

EMERGING EMC CHALLENGES IN MILITARY AND SPACE APPLICATIONS

AtE STAGE, EXHIBIT HALL • 10:30 AM – 12:00 PM

Sponsored by:
TC-8 Aeronautics and Space EMC and TC-3 EMC Environment

Organizer:
Nika Amralah, *Department of National Defence, Canada*
Robert Davis, *Lockheed Martin (Retired), USA*
Carl Hager, *Naval Surface Warfare Center Dahlgren, USA*

As modern military platforms and space systems become increasingly complex, EMC challenges are evolving just as quickly. This interactive "Ask the Experts" panel brings together technical leaders from government and industry to examine the emerging EMC issues shaping nextgeneration defense and aerospace technologies.

Panelists will address topics such as operating in dense RF environments, ensuring interoperability across multinational systems, EMC considerations for space, advanced platform design trends, and the unique test and evaluation needs associated with sophisticated missions. Attendees are invited to bring questions, or simply listen and learn, for an engaging discussion with experts working at the forefront of military and space EMC.

Planned Panelists:
Jim Lukash, *Lockheed Martin Space Systems, USA*
Gregory Hiltz, *Quality Engineering Test Establishment, Canada*
Finbarr O'Connor, *Huntington Ingalls Industries, USA*
Mark Waller, *US Army Redstone Test Center, USA*
Michael Stone, *NAVAIR Patuxent Naval Air Station, USA*

Photo by Patrick Andre

The following information is preliminary and subject to change.

EXPERIMENTS & DEMONSTRATIONS

You will not want to miss the popular Experiments and Demonstrations program that will be held in the Exhibition Hall. This hands-on activity provides a unique learning experience that complements the technical presentations at the symposium. It is traditionally one of the educational highlights of the annual symposium!

A Deep Dive into ISO11452-9 Portable Transmitter Testing

PRESENTERS:
Aaron Lutz and Leonard Wilson, *Rohde & Schwarz*

This technical demonstration provides a comprehensive overview of the ISO 11452-9:2021 standard, highlighting critical updates and methodology shifts from the previous 2012 version. The presentation details the essential equipment configurations, calibration requirements, and verification protocols necessary for testing. A practical application of these standards is showcased through a live demonstration featuring RF test equipment and specialized EMC test software, providing attendees with insights into modern electromagnetic immunity testing.

Capacitive and Inductive Crosstalk

SPONSORED BY TC-8

PRESENTER:
John McCloskey, *EMC-Closkey*

Sooner or later, every EMC engineer will encounter a crosstalk problem. As with any EMC problem, the engineer must properly understand the nature of the coupling in order to provide an effective mitigation strategy. This demonstration will address the two major types of crosstalk, capacitive (electric field) and inductive (magnetic field). You will learn how to distinguish between these two types and how to apply appropriate mitigation strategies for either.

Computational Modeling and Characterization for Signal Integrity and Power Integrity: A Comprehensive Approach for the IEEE EMC/SIPI Conference Software Demonstration

SPONSORED BY TC-10

PRESENTERS:
Shahid Ahmed, *TE Connectivity*
Aishah Shahid, *Student, Princeton University*

Signal Integrity (SI) and Power Integrity (PI) are critical aspects of modern electronic system design. As devices become faster and more complex, the importance of ensuring reliable and efficient signal and power delivery across circuits increases significantly. This proposal aims to demonstrate a computational modeling and characterization framework that integrates cutting-edge simulation techniques for analyzing and improving SI and PI. Through a software demo, we will showcase how these models can predict and resolve common issues such as signal degradation, crosstalk, electromagnetic interference (EMI), and power noise. The proposed demo will provide valuable insights for engineers and researchers seeking to enhance the performance of high-speed and high-frequency systems while adhering to the latest EMC regulations.

Photo by Patrick Andre

The following information is preliminary and subject to change.

Cylindrical Mode Filtered SVSWR Demonstration

PRESENTERS:
Yibo Wang and Zhong Chen, *ETS-Lindgren*

The Cylindrical Mode Filtered SVSWR (CMF SVSWR) is measured by placing the transmit antenna (typically a low gain omni-directional antenna) at the edge of the turntable and performing a single cut vector pattern measurement. The vector S21 as a function of turntable angle at each frequency is transformed to the spectrum domain, where a filter can be applied to mathematically remove the chamber effects. The SVSWR is derived by comparing the original pattern in the chamber to the “clean” filtered pattern. This CMF SVSWR provides a more comprehensive evaluation of the EMC chamber quiet zone and can be readily measured without any special positioning fixtures. The demonstration will show an entire measurement process including the post processing which can be performed in real time. This new measurement technique is under consideration for the new draft standard ANSI C63.25.3 under development by the ANSC C63® committee for EMC test sites from 18 GHz to 40 GHz.

Effective Measurements Using a Modern EMI Test Receiver

PRESENTER:
Patrick Mayer, *Rohde & Schwarz*

This workshop starts with an introduction to the basics of the EMI test receiver. Characteristics, differences to oscilloscopes or spectrum analyzers, as well as important parameters for a successful EMI measurement are highlighted. This serves as a basis for the following topics of the workshop and offers participants with different levels of knowledge the opportunity to attend this workshop. The technological development of EMI measurement technology and the outstanding advantages of modern instruments will be demonstrated. Modern EMI test receivers rely on the Fast Fourier Transform (FFT), which was only made possible by modern signal processing and high computing power. Large bandwidths not only ensure enormous measurement speed improvements, but also increase reliability, repeatability and offers unprecedented possibilities for analyzing the measurement objects. This will be examined in a practical way on the instrument as well as with external automation software. In addition, the workshop shows current measurement methods in practice that highlights the problem of high input levels and solutions to avoid false measurements or even costly damages to the device. The teaching of theory in this workshop is always supported by practical measurements and demonstrations directly on the instrument.

Electromagnetic Compatibility Simulations for Air, Sea, and Ground Platforms

SPONSORED BY TC-9

PRESENTER:
CJ Reddy, *Siemens Digital Industries*

Electromagnetic compatibility (EMC) is a critical part of platform design in the defense industry. Numerical simulation for EMC problems - such as radiation or crosstalk at cable harnesses - can help to identify and analyze potential EMC issues at an early stage and find corrective actions. When designing complex systems, compliance with electromagnetic radiation hazard standards (e.g., ICNIRP 2020) must be ensured. In this demo, we will introduce electromagnetic simulation methods for cable modelling (radiation/irradiation), shielding effectiveness, High Intensity Radiated Fields (HIRF) and Electromagnetic Pulse (EMP). We will also discuss the hazards of electromagnetic radiation to personnel (HERP), ordnance (HERO), and fuel (HERF) and how this can be estimated through numerical simulations.

EMC Analysis of a Digital Prototype of Automotive Harness

PRESENTERS:
Gopinath Gampala and CJ Reddy, *Siemens Digital Industries*

Radiated emissions or unwanted electromagnetic radiation is a major concern with any electrical or electronic device. In automotive and aerospace, cars and airplanes have several control units interconnected with cables. Considering the design cycle of an EV car, the wire harness design, the PCBs of the control units, the connectors, etc., are handled by different design groups. A unified workflow to exchange the data between these design groups to identify the EMC/EMI issues in the early design stages would eliminate a lot of re-work. This software demonstration presents such a workflow between Siemens Capital, HyperLynx and Feko. The wire harness designed in Capital Harness Designer can be exported through a special plug-in to the industry standard KBL file. This plug-in allows the cable cross-sections, paths, connectors, shields, bundles, splices, material properties, etc., to be automatically imported into Feko.

This eliminates the need to redefine the automotive harness details in Feko. The ECAD import functionality in Feko allows the PCBs designed in HyperLynx to be imported into Feko keeping the layered stack information intact. The schematic link functionality in Feko allows direct connection between the cable ports on the harness and the geometry ports on the PCB. This digital prototype would empower the engineers to perform an integrated EMC analysis and test various mitigation techniques, like modifying the cable route, changing the shielding parameters, etc. This workflow will be presented at the conference with live examples.

The following information is preliminary and subject to change.

EMC Chamber Simulation vs. Measurement

PRESENTERS:
Yibo Wang, Zhong Chen and Jack McFadden, *ETS-Lindgren*
Bob Mitchell, *TUV Rheinland AG*

EMC chamber performance is validated using standardized tests such as Normalized Site Attenuation (NSA), site Voltage Standing Wave Ratio (sVSWR), and Field Uniformity (FU), as defined in ANSI, CISPR, and IEC standards. Meeting requirements such as 4 dB NSA and 6 dB sVSWR can be straightforward with unlimited space and budget, but real projects must balance building constraints, budget limits, quiet zone size, and absorber coverage. Because of these real-world tradeoffs, performance prediction is essential to optimize key design choices such as chamber size, geometry, absorber selection, and test setup. Accurate modeling is the foundation for reliable prediction and efficient design optimization.

This demonstration includes three parts. First, we will provide an overview of the EMC chamber design workflow using simulation-driven optimization and show how accurate simulations help achieve target performance under practical constraints. Second, we will present a case study of a newly built 10 m EMC chamber, including a 3D model and a direct comparison between simulated results and measured validation data. Third, in the same 10 m chamber, we will demonstrate EMC radiated emissions testing using antenna mast solutions and compare their performance, including a linear mast, a fixed-height boresight mast, and a new-generation adjustable-height boresight mast. The demonstration will highlight the advantages of boresight over a linear mast, and the added benefits of adjustable-height boresighting for accurate and repeatable measurements across different test setups.

Photo by Patrick Andre

Fast CO-SIMULATION for Both EMC and Signal Integrity - to 8 GHz, 18 GHz, 40 GHz - Using NEW Statistical Wave Physics Simulation

SPONSORED BY TC-10

PRESENTER:
Conor McKeever, *Robust Physics*

Signal Integrity engineers may not realize that small radiation losses on a digital channel can still mean large radiation susceptibility to high levels of electromagnetic interference. Also, digital interconnects are typically installed in bounding enclosures with reverberant electric field conditions, Reverberation creates highly variable EMI levels which can only be predicted statistically - typically with a Min-Max dynamic range of 40 dB or more. So for increasingly high data rates and long digital interconnects on aircraft and automobiles, the EMC engineer becomes an important part of the signal integrity equation. This demo session will use NEW statistical wave physics CO-SIMULATION to model the multple radiation susceptibility paths of a digital interconnect, to predict eye diagrams and bit error rates on the digital interconnect and to interactively simulate signal integrity design solutions with a simple, mesh-free, system-level model that solves to 8/18/40 GHz in typically less than 60 seconds.

Get the Best Immunity Test Coverage: Closed-Loop E-Field Control in Reverberation Chambers

PRESENTERS:
Samuel Hildebrandt and Lukas Oppermann, *LUMILOOP GmbH*

The demo session will start with a brief introduction on the basics of reverberation chambers (RCs). Validation, radiated immunity as well as radiated emission testing are discussed.

We will bring a small, but fully working, stirred RC to the stage. Eight fast, synchronized electric-field probes will showcase real-time E-field strength measurements. Closed loop E-field control based on statistics is shown with different chamber loading. In a custom software, the audience can easily understand how the closed-loop control works. A demonstration using commercial EMC test automation software shows that the method is ready for day-to-day use. LUMILOOP's LSProbe E-field Probes enable accelerated measurements according to ISO 11451-5.

The reverb chamber basics will also be visualized using live measurements, helping to quickly grasp how the invisible electric field behaves.

Learn on how to improve your EMC measurements. Save time and money while having a better test coverage!

The following information is preliminary and subject to change.

Impact of Cable Length, Parasitic Capacitance, and Winding Configuration on Impedance Measurements of Cable Ferrites

SPONSORED BY TC-4

PRESENTER:
Gustavo Perez, *Wurth Elektronik eiSos GmbH & Co KG*

Accurate impedance characterization of cable ferrites is essential for selecting the appropriate suppression component in electromagnetic compatibility (EMC) applications. However, measurement accuracy can be significantly affected by the test setup, particularly the properties of the cable used during the evaluation. This demonstration investigates how cable length, routing, and associated parasitic capacitance influence impedance measurements of cable ferrites across frequency. Through practical examples, we show how longer cables introduce resonant behaviors that distort the expected impedance profile, potentially leading to incorrect component selection.

In addition, the demo compares the impact of different numbers of turns on the ferrite core and highlights how this interacts with material characteristics. Using samples of various ferrite materials, we examine their complex permeability curves and illustrate how material choice determines suppression performance over frequency. The session aims to provide attendees with a deeper understanding of best practices for reliable ferrite impedance measurements, emphasizing how test setup optimization and material knowledge contribute to achieving consistent and meaningful EMC results.

Lightning Zoning of Aircraft per ARP5414 and Their Application in MIL-STD-464D Testing for Radomes and Other Leading Surfaces of Aircraft.

SPONSORED BY TC-5

PRESENTERS:
Christophor Hillyard, *Navy MWR Naval Air Station Patuxent River (Lightning Laboratory)*
Tiffany Morisak, *Naval Air Systems Command (Electromagnetic Effects)*
Michael Stone, *Naval Air Warfare Center Aircraft Division (Integrated Battle Space Simulation and Test)*

This approach will also allow us to emphasize how these tests contribute to E3 design and mitigation strategies for lightning protection.

Low Cost Tools for EMC Troubleshooting

SPONSORED BY TC-3

PRESENTER:
Karen Burnham, *EMC United*

EMC troubleshooting often does not require the latest and greatest and most sensitive equipment. Many EMC issues are easy to detect, and after that you mostly need to monitor if the situation improves or gets worse with various configuration changes. This session introduces the audience to low cost measurement tools, and ones you can make yourself, that can help you tackle EMC problems.

Optimizing EMC Data Processing and Reporting Through Software Automation

PRESENTERS:
Ben Hodges, *ETS-Lindgren Finland*
Ethan Swanson, *Element Rockford, IL*

This demonstration presents a fully automated emissions testing workflow that converts raw electromagnetic interference (EMI) measurement data into a formatted test report in real time. Attendees are encouraged to bring their own hand-held devices—or use provided examples— to perform an emissions measurement. Using predefined measurement parameters, the automated system processes the acquired data, applies limit comparisons, and generates a standardized test report that is immediately printed and delivered to the participant as a physical souvenir.

The objective of this demonstration is to showcase how modern automation techniques can significantly reduce the time and effort traditionally required to move from measurement to documented results in EMC testing. By integrating instrumentation control, data analysis, and report generation into a single workflow, the demonstration highlights opportunities to improve test efficiency, consistency, and repeatability in both laboratory and pre-compliance environments. The walk-up format of the demonstration emphasizes accessibility and real-world applicability.

The presenters represent a commercial EMC test lab principal engineer and a commercial EMC test software engineer who will share their expertise through case-studies highlighting novel applications and efficiencies using automated EMC software.

The following information is preliminary and subject to change.

PCB Measurement and Simulation Validation Using a NanoVNA and a Community-Based EM Solver

SPONSORED BY TC-9

PRESENTERS:
Johnny Himbele, *Tanager*
Patrick DeRoy, *Analog Devices, Inc.*
Louann Mlekodaj, *Shure, Inc.*

This Experiments & Demonstrations (E&D) session presents a hands-on PCB measurement workflow using an affordable vector network analyzer (NanoVNA), combined with electromagnetic (EM) simulation-based validation.

Printed circuit board (PCB) test structures will be measured using a NanoVNA, and representative frequency-domain results such as S-parameters will be obtained. Community-based (free) numerical EM simulations of the corresponding configurations will then be used to validate the measured results, highlighting agreement, modeling assumptions, and sources of discrepancy.

Based on this validation, the demonstration will further show how EM simulation can be used to extend analysis beyond what can be practically measured during a live session, providing additional insight into PCB behavior. The session emphasizes the complementary roles of measurement and simulation, with a particular focus on simulation as a tool for validation and future design exploration.

Photo by Patrick Andre

Regulatory Compliance Testing for Wireless Medical Devices

PRESENTER:
Bill Koerner, *Keysight Technologies, Inc.*

As the use of connected medical devices and internet of things (IoT) devices continue to increase, the challenges associated with regulatory compliance testing also increases. With higher speed chips, switching power supplies, cramped circuit layout, the EMC challenges can increase, and shift higher in frequency. Furthermore, the growing use of connected medical devices in mission-critical applications (operating rooms, remote health, implanted devices) means that the consequences of poor coexistence are more severe than ever before. It is crucial for medical device manufacturers to guarantee a seamless user experience and reliability of the device operating in environments with numerous competing wireless signals and to comply with ANSI C63.27 standard or guidance. Neglecting to consider unforeseen usage scenarios can expose vulnerabilities in the performance and resilience of the wireless devices. The absence of defined testing parameters and unambiguous pass/fail benchmarks leads to irregular assessment, impeding the efficiency of quality evaluation. In this session, attendees will learn the challenges of wireless regulatory compliance testing, and understand the key guidance and standards associated with wireless coexistence testing, and EMI. Along with that, there is the question of do I need to test the certified module incorporated into my medical device. This presentation will address that, and demonstrate ways to quickly and accurately test the wireless device for compliance. Also new is the concern of cybersecurity of the medical device. The demos will include examples of co-existence testing; regulatory compliance testing for FCC and ETSI standards, and how to conduct cybersecurity testing on medical devices.

Reverberation Chamber Testing Versus Anechoic Chamber Testing for System-Level Radiated Immunity & Radiated Emissions - What Statistical Wave Physics SIMULATION Can Tell Us?

SPONSORED BY TC-9

PRESENTER:
Paul Bremner, *Robust Physics*

Reverberation Chamber testing for Radiated Immunity may only require one test - which might be a big time and cost saving over multiple test configurations in the Anechoic chamber. But what is the difference in electric field environments created in each case ? And how to correctly define the statistical limits of reverberation chamber testing, so that they reliably "enclose" the results from multiple Anechoic chamber test conditions ? This session will demonstrate the use of new statistical wave physics SIMULATION software to simply and quickly answer these questions.

Taming Magnetic Chaos: Next Gen Nanocrystalline & Ferrite Absorbers for Low-Frequency EMI

SPONSORED BY TC-7

PRESENTER:
Victor Martinez Garcia, *Wurth Elektronik eiSos GmbH & Co KG*

Low-frequency magnetic interference remains one of the most difficult challenges in modern electronic systems, especially in applications involving Wireless Power Transfer (WPT), NFC, and tightly integrated electronics. Traditional ferrite-based magnetic absorbers—such as flexible absorber sheets and flexible sintered ferrite sheets—have long been the industry's workhorses for mitigating magnetic coupling, suppressing resonances, and stabilizing near-field behavior. Their high permeability and predictable frequency response make them indispensable in many designs, yet they reach intrinsic limits when broader bandwidth, thinner form factors, or stronger low-frequency suppression are required.

This experiment introduces a next-generation nanocrystalline magnetic absorber designed to extend EMI suppression performance into regions where ferrite materials begin to struggle. By leveraging stacked ultra-thin nanocrystalline layers with exceptionally high permeability and low coercivity, this new material exhibits superior absorption in the low-frequency domain while avoiding the reflections, detuning effects, and integration constraints commonly encountered with metallic shielding solutions.

The session will present a comparative study between nanocrystalline absorbers and established magnetic absorbers solutions, including permeability behavior, frequency response, mechanical characteristics, and impact on the overall electromagnetic environment. Practical demonstrations will show how these materials perform in real-world wireless applications, such as an NFC communication setup and a wireless power transfer system, emphasizing how absorber-based shielding can stabilize resonant circuits without degrading coil efficiency.

By combining ferrite heritage with nanocrystalline innovation, this work highlights a new path forward in achieving broadband, low-intrusion EMI control for next-generation wireless designs.

Time Domain Methods for Measuring Power Rail Noise, Stability and EMI

PRESENTER:
Michael Schnecker, *Rohde & Schwarz*

The increasing current levels required by the more powerful processors used in AI systems are pushing the limits of frequency domain methods for measuring impedance and stability. This demonstration will show time-domain methods for analyzing the worst-case voltage ripple under dynamic loading conditions. Included in the demonstration will be measuring PDN noise under dynamic load conditions with 100%-time coverage, power rail crosstalk, evaluating stability, and potential EMI sources.

Understanding Near-Field Probe Concepts and Design Through Simulation, Measurement, and Comparison

PRESENTER:
Clint Patton, *GoEngineer*

This demonstration combines simulation and measurement to examine the physics and practical design of near-field sniffer probes. Full-wave electromagnetic simulations are used to illustrate key near-field coupling mechanisms and to guide the design of low-cost, do-it-yourself (DIY) probe geometries. The simulated behavior is correlated with measurements from fabricated probes, and performance is compared with commercially available near-field probes. Techniques for quantifying probe frequency range and for integrating probes with low-noise amplifiers (LNAs) are demonstrated. The session concludes with a live demonstration of optimized probe designs and near-field measurements, reinforcing the connection between simulation, theory, and practice.

STANDARDS WEEK 2026

TECHNICAL PROGRAM

The following information is preliminary and subject to change.

STANDARDS WEEK is a combination of talks, tutorials, workshops, panel sessions, and demonstrations that will inform us about new developments in international EMC and Signal Integrity/Power Integrity (SIPI) standards. You can also attend one of the many standards committee meetings and/or working group meetings during the Symposium week to learn more about the standards process, and how you can get involved. These meetings are open to all. Step up and serve your community and share your expertise!

Photo by Patrick Andre

STANDARDS HAPPY HOUR

THURSDAY, AUGUST 6 • 4:00 – 6:00 PM
LOCATION: Monet

Open to all who join us for one of the Standards Meetings this week, while supplies last.

Come join us for a chance to mingle and network with professionals who care about standards and technical excellence just as much as you do. As thanks to everyone who sits around a U-shaped conference table for an hour or two, we'd like to provide you with a more relaxed and informal setting to chat. Drinks and heavy appetizers will be available with ticket.

Meeting/Event Name	Room	Date	Start Time	End Time	Type
IEEE Standards Activities Coordination Committee Meeting	Metropolitan	Monday, August 3	12:00 PM	1:30 PM	Standards Services
1848 Renewal Working Group	Milan	Wednesday, August 5	8:00 AM	9:30 AM	Standards Services
Shielding Standards Continuity Group Meeting (with focus on IEEE 299 and 299.1)	Monet	Wednesday, August 5	8:00 AM	10:00 AM	Standards Services
New Computational Electromagnetic Standard	Milan	Wednesday, August 5	12:00 PM	1:00 PM	Standards Services
IBIS Summit	Miro	Thursday, August 6	8:00 AM	12:00 PM	Standards Services
PAR 2838 WG	Ming	Thursday, August 6	10:00 AM	12:00 PM	Standards Services
SDECom Meeting	Ming	Thursday, August 6	2:00 PM	4:00 PM	Standards Services
Standards Happy Hour	Monet	Thursday, August 6	4:00 PM	6:00 PM	Standards Services

STUDENT EMC HARDWARE DESIGN COMPETITION

The following information is preliminary and subject to change.

The IEEE Electromagnetic Compatibility (EMC) Society invited student teams to participate in the **2026 Student Hardware Design Competition**, focused on developing practical skills in EMC measurement, analysis, and problem solving. This year's challenge asked students to characterize the electromagnetic compatibility (EMC) performance of a working electronic device — an Arduino-based system and to communicate results clearly and creatively.

The competition emphasizes real-world engineering practice: designing test setups, collecting meaningful data, interpreting results, and proposing or demonstrating mitigation techniques.

We are excited to announce the Top 3 Finalists and look forward to the competition at EMC+SIPI 2026. Join us to support the competing student teams!

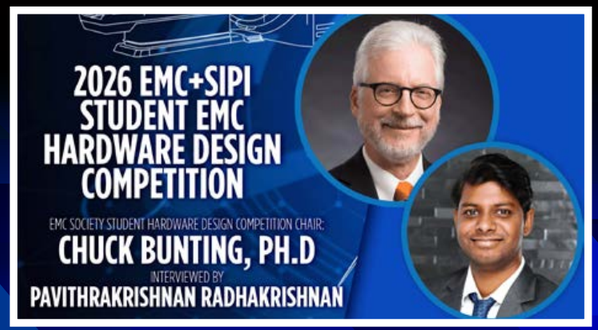
Chair: Prof. Charles F. Bunting, *Oklahoma State University, OK, USA*
Co-Chair: Dr. Pavithrakrishnan Radhakrishnan, *Oklahoma State University, OK, USA*
Date: Tuesday, August 4, 2026
Time: 2:00 PM – 3:00 PM
Location: Trinity Exhibit Hall (Trinity Complex)

TOP 3 FINALISTS

Team Name: Rose-Hulman Team 1
Members: Yejia Hao, Jiuzhou Lin and Yicheng Zhu
Supervisor Contact: Professor Michael Cracraft
Institution: Rose-Hulman Institute of Technology, Terre Haute, Indiana, USA

Team Name: WWE (World-Wide EMC)
Members: Yejun Kim, Hariharan Prabakar, Sathvika Bandi, Cody Goins, Ahyeon Lee
Supervisor Contact: Prof. Daryl Beetner
Institution: Missouri University of Science and Technology, Rolla, Missouri, USA

Team Name: Team Watt-erloo
Members: Jake Peters, Alanna Rudolph, Amirbahador Mansoori, Dhyey Bhatt
Supervisor Contact: Prof. George Shaker
Institution: University of Waterloo, Waterloo, Ontario, Canada



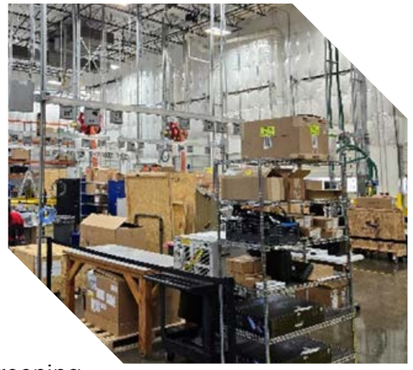
WATCH THE INTERVIEW WITH CHUCK BUNTING, STUDENT HARDWARE COMPETITION CHAIR

The following information is preliminary and subject to change.

EXPLORE INNOVATION AT ROHDE & SCHWARZ!

Are you passionate about high-tech electronics, communications systems, and cutting-edge testing technologies? Don't miss this exclusive technical tour of the R&S Texas Production and Integration Center (TPIC) in Coppell!

As the primary integration site for Rohde & Schwarz North America systems, TPIC is where innovation meets precision. This state-of-the-art facility designs, builds, tests, and ships complete systems, all under one roof.



WHAT YOU'LL EXPERIENCE:

Floor Walkthrough, Step inside our designated production space and see firsthand:

- Cable manufacturing
- Rack building
- EMC system integration & testing
- Integration of communication test systems into vehicles

Learn how rigorous quality control processes and advanced engineering practices ensure world-class performance and reliability.

Advanced Security Technology

Get an exclusive look at R&S body scanners used for security screening in airports, public buildings, and high-security environments. Discover how these systems detect concealed objects safely and effectively — without physical contact.

Over-the-Air (OTA) Chamber & Wireless Innovation

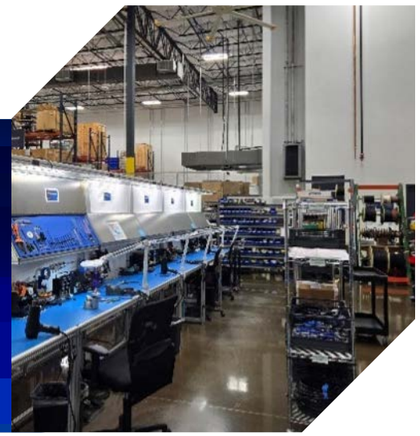
If you are a wireless engineer interested in Over-the-Air (OTA) test chambers and evolving wireless testing requirements, this tour is for you. Gain insight into wireless testing strategies supporting 5G and Wi-Fi 6E, and see how TPIC is preparing for the future of wireless communications and advanced compliance testing.

Join us for a behind-the-scenes look at engineering excellence in action at Rohde & Schwarz.

SPONSORED BY

ROHDE&SCHWARZ

Make ideas real



Date: Thursday, August 6, 2026 • 2:00 – 5:00 PM

Location: Texas Production and Integration Center (TPIC) Coppell, TX

Hosted by: Rohde & Schwarz

Cost: $30 per person before June 30/$35 after June 30

Ticket price includes bus transportation to/from the Hilton Anatole Hotel to the TPIC and some refreshments. Tickets are limited and will be sold on a first-come, first-served basis. Comfortable walking shoes are highly recommended.

The following information is preliminary and subject to change.

WORKING GROUPS, COLLATERAL MEETINGS & SOCIAL EVENTS

Times are subject to change. Please confirm the meeting schedule on the website, in the final program, and on the mobile app closer to the symposium start date.

SUNDAY, AUGUST 2

Meeting/Event Name	Room	Start Time	End Time	Type	Attendees
EMC Society Board of Governors' Meeting	Miro	9:00AM	5:00 PM	Other	Pre-Registration

MONDAY, AUGUST 3

Meeting/Event Name	Room	Start Time	End Time	Type	Attendees
Speaker Breakfast	De Sota	7:00 AM	8:30 AM	Other	Speakers Only
Technical Advisory Committee (TAC) Meeting #1	Miro	7:00 AM	8:30 AM	Technical Services	
IEEE Standards Activities Coordination Committee Meeting	Metropolitan	12:00 PM	1:30 PM	Standards Services	
Young Professionals Luncheon	Miro	12:00 PM	1:30 PM	Social Event	Pre-Registration
Chapter Chair Training Session and Luncheon	Monet	12:00 PM	1:30 PM	Member Services	Invitation Only

TUESDAY, AUGUST 4

Meeting/Event Name	Room	Start Time	End Time	Type	Attendees
Speaker Breakfast	De Sota	7:00 AM	8:30 AM	Other	Speakers Only
TC-2 EMC Measurements Committee Meeting	Metropolitan	7:00 AM	9:00 AM	Technical Services	
TC-8 Aeronautics and Space EMC Committee Meeting	Monet	12:00 PM	1:00 PM	Technical Services	
TC-7 Electrical Systems and Power Electronics EMC Committee Meeting	Metropolitan	12:00 PM	1:30 PM	Technical Services	
TC-9 Computational Electromagnetics Committee Meeting	Miro	12:00 PM	1:30 PM	Technical Services	
Senior Elevation Event	Madrid	2:30 PM	4:00 PM	Member Services	
Welcome Reception	Trinity Exhibit Hall	5:00 PM	6:30 PM	Social Event	
Young Professionals "After the Welcome Reception" Social Event	Offsite - Bowl Games	6:30 PM	9:30 PM	Social Event	Pre-Registration

WEDNESDAY, AUGUST 5

Meeting/Event Name	Room	Start Time	End Time	Type	Attendees
Speaker Breakfast	De Sota	7:00 AM	8:30 AM	Other	Speakers Only
Education Committee Information Session	Metropolitan	7:00 AM	8:30 AM	Technical Services	
TC-1 EMC Management Committee	Ming	7:30 AM	9:00 AM	Technical Services	
TC-12 EMC for Emerging Wireless Technologies Committee Meeting	Miro	8:00 AM	9:00 AM	Technical Services	
1848 Renewal Working Group	Milan	8:00 AM	9:30 AM	Standards Services	
Shielding Standards Continuity Group Meeting (with focus on IEEE 299 and 299.1)	Monet	8:00 AM	10:00 AM	Standards Services	
New Computational Electromagnetic Standard	Milan	12:00 PM	1:00 PM	Standards Services	
Past Presidents Luncheon	De Sota A	12:00 PM	1:30 PM	Other	Invitation Only
TC-10 Signal and Power Integrity Committee Meeting	Monet	12:00 PM	1:30 PM	Technical Services	
TC-11 Nanotechnology and Advanced Materials Committee Meeting	Ming	12:00 PM	1:30 PM	Technical Services	
TC-5 High Power Electromagnetics (HPEM) Technical Committee Meeting	Metropolitan	12:00 PM	1:30 PM	Technical Services	
Youth Technical Program	DeLaSalle	1:00 PM	3:30 PM	Social Event	Pre-Registration
Women in Engineering Event	Madrid	4:00 PM	5:30 PM	Member Services	
Gala Dinner	Offsite - Gilley's Dallas	7:00 PM	10:00 PM	Social Event	Pre-Registration

THURSDAY, AUGUST 6

Meeting/Event Name	Room	Start Time	End Time	Type	Attendees
Team EMC Bike Ride	Main Entrance	6:45 AM		Other	Pre-Registration
Speaker Breakfast	De Sota	7:00 AM	8:30 AM	Other	Speakers Only
TC- 6 Spectrum Engineering Committee Meeting	Metropolitan	7:30 AM	8:30 AM	Technical Services	
TC-4 Electromagnetic Interference Control Committee Meeting	Monet	7:30 AM	9:00 AM	Technical Services	
TC-3 Electromagnetic Environment Committee Meeting	Ming	8:00 AM	9:30 AM	Technical Services	
T-EMC, T-SIPI, L-EMCPA Associate Editor Meeting	Milan	8:00 AM	10:00 AM	Communication Services	
IBIS Summit	Miro	8:00 AM	12:00 PM	Standards Services	
PAR 2838 WG	Ming	10:00 AM	12:00 PM	Standards Services	
Awards Luncheon	Trinity Ballroom	12:00 PM	1:30 PM	Social Event	Pre-Registration
SC-3 Special Committee on Machine Learning and AI in EMC and SIPI Committee Meeting	Metropolitan	2:00 PM	2:30 PM	Technical Services	
SDECom Meeting	Ming	2:00 PM	4:00 PM	Standards Services	
EMC-S PerCom Meeting	Milan	2:00 PM	3:00 PM	Communication Services	
Standards Reception	Monet	4:00 PM	6:00 PM	Standards Services	Invitation Only
EMC Society Board of Governors' Meeting	Metropolitan	6:00 PM	8:00 PM	Other	Pre-Registration

FRIDAY, AUGUST 7

Meeting/Event Name	Room	Start Time	End Time	Type	Attendees
Speaker Breakfast	De Sota	7:00 AM	8:30 AM	Other	Speakers Only
Technical Advisory Board (TAC) Meeting 2	Miro	7:00 AM	8:30 AM	Technical Services	

EMC SOCIETY TECHNICAL COMMITTEES – BUILD YOUR EXPERTISE AND YOUR CAREER

No matter where you are in the industry, at some point you will deal with an EMC issue. Maybe a device is causing interference or maybe it's vulnerable to radio-frequency fields. Maybe a device crashes or resets after an electrostatic discharge. Maybe you've been looking for help explaining an EMC problem to your customer or your boss. All of these things happen. **Become part of the solution.**

The **IEEE EMC Society's Technical Committees (TCs)** convene to set EMC standards & practices and develop tools for success. Covering topics ranging from professional development to nanotechnology, the TCs are volunteer consensus groups that build our industry's foundations. Join remotely or in-person and help form important technical practices.

Find your place among these forward-looking committees. Join a TC today and set standards, explore emerging technology and help develop programs and create the tools that you and your industry need.

If you are interested in joining a committee, please complete the TC/SC Interest form.

www.emcs.org/technical-committees/tc-sc-interest-form

WORKING GROUPS AND TECHNICAL COMMITTEE MEETINGS

The EMC Society has many working groups and committees that are tackling the wide range of functions of the society's mission. The working groups primarily come out of the EMC Society Standards activities developing new EMC Standards and revising existing standards. Standing and special committees are formed to address a broad range of needs, ranging from interfacing with other industry organizations to dealing with the administration of the society. All of these meetings are open to everyone (unless listed otherwise). Join them for breakfast, breaks, lunch or dinner. Learn what other EMC members are working on and influence how the society operates.

COLLATERAL MEETINGS

With so many people attending this pinnacle event from across the globe, it's a perfect opportunity for groups other than the EMC Society to hold meetings in parallel to the Symposium. Be sure to check out the schedule to find out about the numerous collateral meetings and who can participate. The EMC Society is neither responsible for nor endorses any of these collateral meetings and discourages any meetings from conflicting with the technical and networking programs of the Symposium.

If you would like to schedule a meeting, please contact:
Taylor Linebeger - t.lineberger@ieee.org

Photo by Richard Georgerian

TC 1 EMC Management	This committee is concerned with the development and dissemination of Best Practices and Methodologies for the successful leadership, supervision and guidance of EMC related activities. These Best Practices and Methodologies shall be structured so as to provide assistance to all managers, and engineers. Appropriate and convenient tools shall serve as a foundation to these Best Practices and Methodologies.
TC 2 EMC Measurements	The committee reviews the adequacy of measurement procedures and measurement instrumentation specifications for radiated and conducted emission and immunity tests. Also discussed is the rationale for product emission limits and immunity test levels including performance requirements. The committee also supports EMC standards and procedures that deal with measurements and their uncertainty and how they are interpreted and applied.
TC 3 Electromagnetic Environment	The charter of TC3, the Technical Committee on Electromagnetic Environment is to encourage research on the: • electromagnetic environment (EME) • development of standards for EME measurement and characterization • natural and man-made sources of electromagnetic environment that comprise this environment • effects of noise (unwanted portions of EME) on systems performance • effects of international civil and military standards intended to control man-made intentional and unintentional emissions of electromagnetic energy.
TC 4 Electromagnetic Interference Control	This committee is concerned with design, analysis, and modeling techniques useful in suppressing interference or eliminating it at its source. Bonding, grounding, shielding, and filtering are within the jurisdiction of this committee. These activities span efforts at the system, subsystem, and unit levels
TC 5 High Power Electromagnetics	This committee is concerned with the effects and protection methods for electronic equipment and systems for all types of high power and other electromagnetic threat environments. These environments include electromagnetic pulse (EMP), intentional EMI environments (i.e., narrowband and wideband), lightning electromagnetic currents and fields, electrostatic discharge and geomagnetic storms. In addition this committee deals with the commercial data security issue through electromagnetic information leakage activities. Interactions with subsystems, systems and platforms are included.
TC 6 Spectrum Engineering	This committee is concerned with the analysis, design, and measurement techniques for intentional RF transmitting and receiving equipment to prevent interference and promote efficient spectrum use through technology and operational based approaches,such as software design, dynamic spectral allocation, waveform control, as well as frequency coordination and management procedures.
TC 7 Electrical Systems and Power Electronics EMC	This technical committee is concerned with low-frequency EMC including Power Quality in electric power systems. The committee is focusing on application of fundamental EMC concepts also to low frequency conducted disturbances. EMC in power systems is expected to be increasingly important. This is due to increased use of electronics in renewables, electric vehicles, energy efficient technologies and Smart Grid applications.

TC 8 Aeronautics and Space EMC

This committee is concerned with EMI/EMC issues in aircraft, spacecraft & space launch vehicles, robotic and crewed. The space environment provides unique challenges in the design, development, test and operation of space systems to avoid EMI and achieve EMC. Aeronautics & space EMC covers a wide range of topics on the part, board, box, system, multi-system, planetary and interplanetary levels. The harshness of the atmospheric, launch and space environments necessitates a broader view of EMC issues than traditional terrestrial projects, often leading to creative methods and solutions that can benefit our society's efforts elsewhere on Earth.

TC 9 Computational Electromagnetics

This committee is concerned with broad aspects of Applied Computational Electromagnetic techniques which can be used to model electromagnetic interaction phenomena in circuits, devices, and systems. The primary focus is with the identification of the modeling methods that can be applied to interference (EMC) phenomena, their validation and delineating the practical limits of their applicability. Included are low and high frequency spectral-domain techniques and time-domain methods.

TC 10 Signal and Power Integrity

This committee is concerned with the design, analysis, simulation, modeling and measurement techniques useful in maintaining the quality of electrical signals and power distribution network in printed circuit boards, ICs and within systems. These activities encompass all aspects of signal and power integrity from the integrated circuit level to the system level.

TC 11 Nanotechnology and Advanced Materials

IEEE EMC-S TC-11 Charter is focused on *engineering and scientific aspects* related to **nanotechnology and advanced materials for EMC**. This *includes engineering of new materials, their modeling, manufacturing, characterization, and applications of nanomaterials and nanodevices for EMI mitigation and EMC*. This is an **interdisciplinary area**, combining physics, chemistry, materials science & engineering, electromagnetics, and eventually EMC.

TC-11 deals with modelling, simulation and experimental characterization of nanomaterials and nanodevices for EMC applications. Nanotechnology is the understanding and controlling of matter at atomic and molecular scale, as well as creating artificial materials with nano-size dimensions (3D, 2D, and 1D). Nanotechnology has already found its way into various EMC applications. New materials such as single- and multi-phase composites filled with nanoparticles, nanotube and/or nanofibers have been designed and tested for gaskets and absorbing screens with outstanding performance and capabilities. Innovative nanostructured shields have shown multifunctional properties and higher efficiency than commonly used materials. Nanowires for high-speed interconnects and high-density integrated systems, could replace copper in the near future, but require adequate modelling and simulation approaches for signal integrity and also to avoid electromagnetic interference problems.

TC 12 EMC for Emerging Wireless Technologies

This committee is concerned with the EMC design, analysis, modeling, measurement, and testing aspects of emerging wireless products, such as Internet of Things and 5th Generation of Wireless Communication. The committee encourages research including but not limited to the following areas:

- Innovative Wireless Component Design for System Integration: wireless component design with integrated EMC functions and/or meeting certain EMC specifications
- Radio-Frequency Interference and De-sense: characterization and mitigation of interference from digital circuits to wireless antennas
- EMC and OTA Measurement & Testing of Wireless Systems: development of methods and standards for wireless performance and compliance testing
- Wireless Coexistence: interference control/mitigation among various wireless radios, as well as related testing methods and standard development
- Wireless Product or Subsystem EMC: wireless-specific EMC design for Autonomous cars, Phased Array, and others.

SC 3 Machine Learning and Artificial Intelligence in EMC and SIPI

The presence of machine learning, AI and deep learning are increasingly pervasive. The impact on EMC, SI and PI is changing thought processes and engineering practice.

This Special Committee is concerned with all aspects of machine learning, artificial intelligence and deep learning as it applies to the Society's Field of Interest. It is not limited to any specific aspect of the Society but recognizes that machine learning and related approaches have relevance across the entire spectrum of Society activities.

The role of the committee is to:

- Act as forum for experts researching machine learning and associated technologies
- Provide education and training opportunities for EMC, SI and PI engineers
- Identify and communicate needs within the community, supporting the interaction between problem holders and solution providers.
- Promote standardization activities associated with the impact of machine learning on the Society's Field of Interest.

Standards Advisory and Coordination Committee (SACCom)

The IEEE EMC Society Standards Advisory and Coordination Committee is responsible for providing technical liaison between the IEEE EMC Society Standards Development Committee and various non-IEEE entities involved with EMC standards activities.

In particular, the SACCom will include the following:

- Propose to the EMCS board of directors (BOD), the appointment of representatives to various non-IEEE standards developing entities.
- To monitor the activities of various non-IEEE standards developing organizations with a view toward making recommendations to the EMCS board of directors on any required coordination of those activities within the society.
- To communicate and coordinate with non-IEEE standards developing activities and the EMCS Standards Development Committee on matters relating to the development of EMC related standards.

Standards Development and Education Committee (SDECom)

The IEEE EMC Society Standards Development and Education Committee is responsible for guiding the development of IEEE EMC Standards, the training of those involved in the standards making process and the education of the EMC Society community on all aspects of EMC Standards. The IEEE EMC Society is the primary international developer of fundamental test, measurement and verification standards for EMC.

Education Committee (EdCom)

This committee's mission is to promote EMC education related activities of the IEEE EMC Society. Our vision is to provide opportunities for individuals and organizations involved with electrotechnology and products to become aware of EMC at levels consistent with their needs, and our goals are to establish an awareness of EMC fundamentals throughout industry and academia as well as to enhance EMC education through the development of improved education techniques, materials, opportunities, and communications.

MEET AND NETWORK WITH LIKE-MINDED INDIVIDUALS AT OUR SOCIAL EVENTS

The following information is preliminary and subject to change.

WELCOME RECEPTION

The EMC+SIPI 2026 Welcome Reception will be held in the Exhibit Hall at Trinity Exhibit Hall on Tuesday.

One ticket to this event is included in all 5-Day technical registrations, Companion Program and exhibit hall registrations.

Photo by Patrick Andre

Location: Exhibit Hall, Trinity Exhibit Hall
Date: Tuesday, August 4, 2026
Time: 5:00 – 6:30 PM
Cost: No Charge

Network with your peers and other top industry professionals throughout the week during numerous planned events!

Photo by Patrick Andre

EVENING GALA EVENT

Saddle up for a true Texas experience at our off-site event hosted at Gilley's Dallas—the legendary home of honky-tonk charm, live music, and big-hearted Southern fun. We're taking over one of Dallas's most famous venues for a night packed with great food, cold drinks, lively entertainment, and plenty of room to unwind.

Kick back with colleagues, try your hand at classic Texas line dancing, or just listen to great live music! This is your chance to experience Dallas the way locals do—bold, warm, and unforgettable.

Location: Gilley's Dallas
Date: Wednesday, August 5, 2026
Time: 7:00 – 10:00 PM; Buses will start departing at 6:45pm from the Hilton Anatole Hotel Grand Entrance.
Cost: $120

Photo by Richard Georgerian

AWARDS LUNCHEON

The Awards Luncheon is a wonderful opportunity to recognize achievements and network with families and EMC professionals from academia, industry, government, military, and retired sectors. The event will start off with a catered sit-down meal. Afterwards, the EMC Society will take time to recognize members and non-members for their contribution to the Society and for professional excellence.

Location: Trinity Ballroom
Date: Thursday, August 6, 2026
Time: 12:00 PM – 1:30 PM
Cost: $70

CHAPTER CHAIR TRAINING SESSION AND LUNCHEON

The Chapter Chair Training Session provides a forum for focused training to the Chapter Chairs, the opportunity to discuss chapter issues and get group feedback. Additionally, the session gives the Chapter Chairs the opportunity to meet other Chapter Chairs from around the world and for the Chapter Coordinator to disseminate important information from IEEE headquarters and the EMC Society Board of Governors. A Social Session will precede the Luncheon to give the Chapter Chairs the opportunity to socialize with the other Chapter Chairs and their Angels.

The Luncheon will be served at the end of the Social Session. Besides a great meal, each Chapter Chair or their representatives will have the opportunity to share what their chapter has been doing for the past year. After the Luncheon, an interactive brainstorming session will conclude the meeting. This session is intended to allow participants to exchange information and new ideas for effective chapter management, as well as to discuss best practices and suggestions for future development and growth of the EMC chapters.

Photo by Karthik Vepuri

Location: Monet
Date & Time: Monday, August 3, 2026 • 12:00 – 1:30 PM
Cost: Free for Chapter Chairs
This is a free event open to Chapter Chairs or their representatives. Please check with your Chapter Chair, as you can be that representative for your chapter if your Chapter Chair cannot attend this event

PAST PRESIDENTS LUNCHEON

The Luncheon is open to Past-Presidents of the EMC Society, and current members of the Board of Directors. The luncheon is a chance for the old and the new to mix, exchanging experiences of the past and challenges of the future relative to the EMC profession. A sit-down lunch is provided. Past-Presidents should inform the Chair of the History Committee (danhoolihanemc@aol.com) of their interest in attending so there will be seating and food available for all.

Photo by Jerry Ramie

Location: De Sota A
Date: Wednesday, August 5, 2026 • 12:00 – 1:30 PM

TEAM EMC

Ready to explore Dallas on two wheels with your fellow EMC Members? We're excited to announce that the plans for our 13th Annual TEAM EMC Bike Ride are officially underway!

This fun, leisurely morning ride is open to riders of all skill levels. It's the perfect opportunity to get some exercise, enjoy the fresh air, and experience the beautiful area in a whole new way.

BIKE RENTAL SHOPS AND MORE DETAILS:
https://2026.emcsipi.org/programs/social-events/team-emc/

Photo by ??????

Meeting Location: Meet at the main entrance of Hilton Anatole Hotel by 6:45 AM
Date & Time: Thursday, August 6, 2026 • 6:45 AM

IEEE EMC SOCIETY WOMEN IN ENGINEERING (WIE) EVENT

IEEE Women in Engineering (WIE) is a global network dedicated to advancing women in engineering and science. Join us during the EMC+SIPI 2026 Symposium for a networking and enrichment event to connect, learn, and share experiences with the EMC community.

This free event includes guest presentations, networking, and a closing celebration. Refreshments will be provided.

Location: Madrid
Date: Wednesday, August 5
Time: 4:00-5:30pm
Cost: Free

Everyone is welcome - men and women - to attend the special presentations!

TIME	TOPIC	PRESENTER/INSTRUCTOR
4:00pm	Welcome	Tara Kellogg *(ETS-Lindgren)*
4:05 pm	GUEST PRESENTATION #1 Launching Your EMC Career: A Blueprint for Young Engineers	Ms Nika Amralah *(Canadian Department of National Defence)*
4:35 pm	Break & Networking Exercise	
4:50 pm	GUEST PRESENTATION #2 Navigating a Trailblazing Career: A Female Air Force Leader and Educator's Journey	Colonel Carey J. Jones *(Air Force)*
5:20 pm	Closing Toast & Refreshments to Celebrate WIE!	
5:30 pm	Adjourn	

YOUNG PROFESSIONALS

Photo by Karthik Vepuri

EMC Society would like to invite all Young Professionals (BS within 15 years) and Undergraduates to our Networking Events at the 2026 EMC+SIPI.

YOUNG PROFESSIONALS LUNCHEON

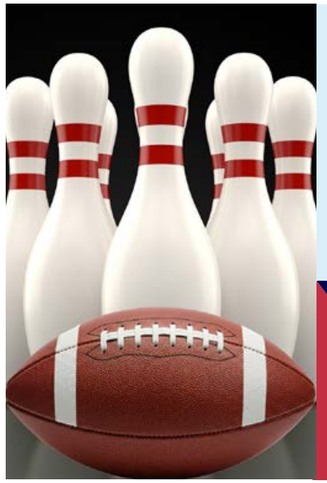
All YPs (BS degree within 15 years) are invited for lunch and socializing at our "YP Luncheon" event. We'll also be highlighting the Best Student Paper (EMC and SIPI) Candidates and announcing the call for 2027 EMC Society YP Ambassadors at this event.

At the 2026 Symposium, and back by popular demand, we're excited to host "EMC+SIPI KAHOOT!" — a fun twist on EMC+SIPI Jeopardy. This high-energy session is a great way to deepen your EMC+SIPI knowledge while enjoying a relaxed, welcoming atmosphere to connect with fellow YPs and seasoned professionals.

Stay tuned to the Dallas Symposium website for additional details and make plans to join us! Meet other young members of the EMC Society, build your network, and learn alongside experts.

Location: Hotel Hilton Anatole
Date: Monday, August 3, 2026
Time: 12pm - 1:30 PM
Registration Fee: $30 registration, Includes Lunch

Space is limited so please register during your symposium registration.



"AFTER THE WELCOME RECEPTION" EVENT

Come enjoy yourself "After the Welcome Reception" at our Tuesday evening social event. This is a great opportunity to continue the conversations and fun from the Welcome Reception into the rest of the evening. Relationships formed in the EMC Society can lead to future collaborations and will provide valuable contacts when you need a friend to bounce ideas off!

Please register in advance during your symposium registration process. Limited space is available.

Location: Bowl Games, 139 Turtle Creek Blvd Suite 120
Date: Tuesday, August 4, 2026
Time: 6:30 pm - 9:30 PM
Registration Fee: $30 registration, Includes 2 drink tickets, shared appetizers and fun games

Space is limited so please register during your symposium registration.

SOUND SCIENCE: CRAFT A SPEAKER FROM EVERYDAY MATERIALS!

Engineering combines creativity, curiosity, and scientific thinking to transform ideas into technologies that shape our everyday lives—from the electronics in our phones to the systems that power music and communication. In this program, students will explore the science of sound and discover how electricity, magnetism, and thoughtful engineering design work together to turn simple signals into the sounds we hear every day.

Open to children ages 6-19. Children younger than 6 may participate, if a parent or older sibling accompanies them. Please sign up via the Registration portal. Please plan on escorting your child to drop them off at the activity, and picking them up at the end. Parents are welcome to stay for the entire session, if they wish.

Location: De La Salle Room
Date: Wednesday, August 5, 2026
Time: 1:00 – 3:30 PM
Registration Fee: FREE

COMPANION CLUB

The Companion Club is your chance to meet new people and catch up with old friends. You may register for the Companion Club as a part of the technical attendee's registration or separately.

Paid Companion Club members are welcome to visit the beautiful Companion Suite open from 8am – 5pm, Monday through Friday. Breakfast vouchers will be provided for the Companion Club participants for the restaurant in the hotel.

This year, the EMC+SIPI Symposium offers two attractive group Companion Tours/Events. However, you don't have to be registered for the Companion Club to participate in a tour/event.

If you register for the Companion Club, you may sign up for the tours/events with your own registration. Otherwise, you may purchase tours/events through the technical attendee's registration; there will be a drop-down space to add your name.

Join your technical attendee at any of our Social Events for more fun and to meet more people. We have special prices for companions under the age of 18. Tickets to the Welcome Reception on Tuesday, a great networking time for all, are included in all Companion Club registrations. The Evening Gala on Wednesday is also a fun event, and companions are invited to register for this event separately in their Companion Club or technical attendee's registration.

For the younger crowd, our ever popular Youth Technical Program is back once again to amaze all companions and guests aged 6 to 19. This program will again be free of charge, but please register early to be assured of a project kit. Registration for each young person can be made either through your own Companion Club registration or the technical attendee's registration. Your children do not need to be registered in the Companion Club to sign up for the Youth Technical Program, which is open to children ages 6 to 19. Please sign them up via the Registration portal. Children younger than 6 may participate, if a parent or older sibling accompanies them. Please plan on escorting your child to drop them off at the activity, and picking them up at the end. Parents are welcome to stay for the entire session, if they wish. A minor release form will need to be completed and submitted before obtaining a badge for anyone under the age of 18.

JOIN THE BREAKFAST CLUB

Would you like to invite your technical attendee to join you for breakfast in the Companion Suite? **"Breakfast Club"** tickets may be purchased by the technical attendee as an option for each day breakfast is desired. Tickets must be purchased at a minimum 24 hours in advance to ensure adequate seating and catering.

Join fellow companions at the symposium by registering for the Companion Club. This is an excellent opportunity to meet new people and reconnect with old friends! Adult or youth (ages 8 to 17) companions who are pre-registered may go directly to the registration desk to obtain their Companion Registration Badge..

This will include:

- Name badge that will allow you access to the Companion Suite and Exhibit Hall (during regular hours)
- Breakfast voucher for the restaurant for four days
- Gift bag with goodies
- One ticket to the Tuesday evening Welcome Reception
- Any tour/event or social event tickets you may have purchased

Youths (ages 8-17) who are registered for the Junior Companion Club are welcome in the Companion Suite with an adult Companion Club member. Children under age 8 do not receive a gift bag but will be admitted free if accompanied by a registered adult Companion Club member.

We look forward to seeing everyone in Dallas on August 3-7, 2026.

Conference attendees, make sure you tell your companions about the Companion Club Tours/Events and sign them up early when you register for the Symposium.

COMPANION CLUB RATES:

Adult, age 18+:
Advance Rate: $190 / Regular Rate: $230 (After June 30, 2026)
Junior, age 8-17:
Advance Rate: $75 / Regular Rate: $85 (After June 30, 2026)
Children under 8: No charge

A LA CARTE TOURS ARE AVAILABLE:

2026.emcsipi.org/programs/companions-tours/companion-tours

COMPANION TOURS

DALLAS HIGHLIGHTS TOUR

Experience the best of Dallas on this dynamic city tour!

Join a knowledgeable Tour Guide as you uncover the city's rich history, thriving arts scene, striking architecture, and key JFK landmarks. Enjoy plenty of photo opportunities, engaging stories, and stops in some of Dallas's most distinctive neighborhoods. It's an ideal way to explore, learn, and fall in love with the city's unique character.

STOPS INCLUDE:

- West End Historic District: Where Dallas Began
- JFK Assassination Site: Walk Through History
- Pioneer Plaza: A Tribute to Texas Heritage
- Downtown Dallas: Iconic Landmarks and Art
- Klyde Warren Park: Urban Oasis
- Margaret Hunt Hill Bridge: Architectural Marvel
- Dallas Arts District: A Cultural Hub
- Victory Park: Where Sports and Culture Meet
- Uptown Dallas: Historic Trolleys and Modern Culture
- Highland Park: Scenic Splendor
- Southern Methodist University: History and Art

Date: Tuesday, August 4, 2026
Time: 9:00am – 1:00pm
Cost: $90 per guest
Includes: Transportation, Tour Guide

FORT WORTH HIGHLIGHTS TOUR

Explore Fort Worth: Where the Spirit of the American West Still Thrives.

Journey into the storied world of Cowboys, Cattle, and Railroads—the forces that shaped this dynamic city and helped define the legendary West.

STOPS INCLUDE:

- Sundance Square: A Downtown Gem
- Uncover Fort Worth's Western Heritage
- Sid Richardson Museum: Art of the American West
- JFK in Fort Worth: A Historic Connection
- The Fort Worth Stockyards: Step into the Old West
- Daily Longhorn Cattle Drive: A Living Tradition
- Cowboy Experiences: Ride, Tour, and Explore
- Mule Alley: Fort Worth's Western Legacy
- Historic Saloons and Hotels
- Billy Bob's: The World's Largest Honky-Tonk
- Shopping and Souvenirs: Western Wear and More
- John Wayne Experience: A Legendary Life
- Iconic Fort Worth: Beyond the Stockyards

Date: Wednesday, August 5, 2026
Time: 9:00AM – 2:00PM
Cost: $95 per guest
Includes: Transportation, Tour Guide

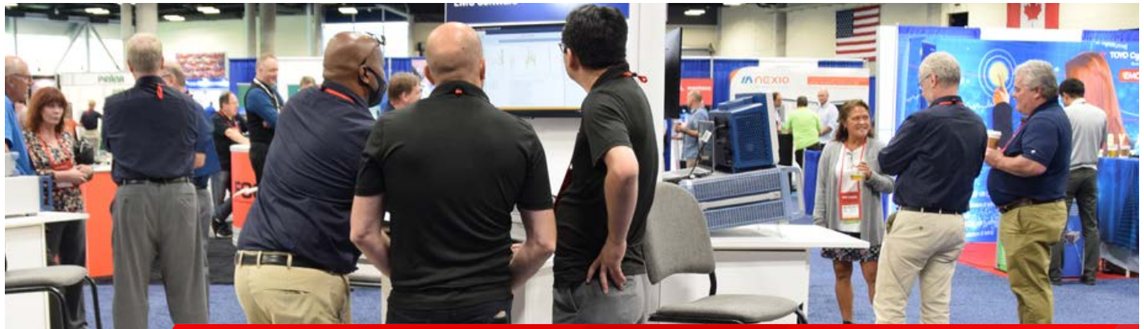


Photo by Richard Georgerian

EXPLORE THE EXHIBIT HALL AND LEARN ABOUT NEW TECHNOLOGIES, INSTRUMENTATION AND SOLUTIONS THAT SERVICE THE INDUSTRY

WHAT'S HAPPENING IN THE EXHIBIT HALL?

- Explore and learn from over a hundred top suppliers
- Attend "Ask the Experts" panels and get your questions answered
- Enjoy Experiments, Demonstrations and Poster Sessions
- Visit exhibitor booths to participate in raffles and daily prizes
- Play the Exhibitor Scavenger Hunt!

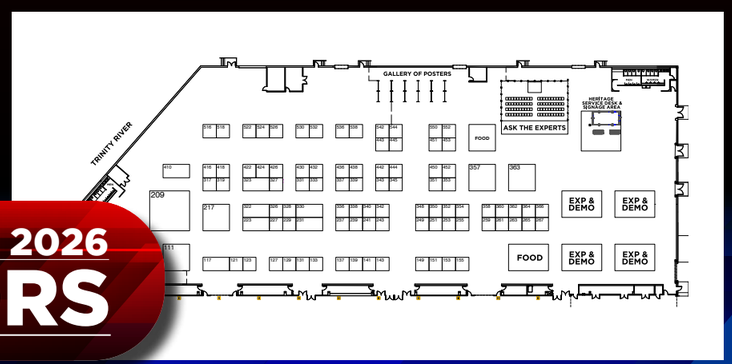
INTERESTED IN EXHIBITING?

We welcome the opportunity to have your organization join us as an industry partner and exhibit at this year's Symposium.

To learn more about exhibiting and sponsorship opportunities, or to reserve your space today visit:

2026.emcsipi.org/exhibitors-sponsors

EXHIBIT HALL IS LOCATED IN HILTON ANATOLE TRINITY HALL



MEET THE EMC+SIPI 2026 EXHIBITORS

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*** Please welcome our first-time exhibitors**

EXHIBIT HALL SCHEDULE

TUESDAY, AUGUST 6
Exhibits Open: 9:30 AM - 6:30 PM
Welcome Reception: 5:00 PM – 6:30 PM

WEDNESDAY, AUGUST 7
Exhibits Open: 10:00 AM – 5:00 PM

THURSDAY, AUGUST 8
Exhibits Open: 10:00 AM – 1:00 PM

ATTENDEES REGISTRATION INFO

Photo by Patrick Andre

EMC+SIPI 2026 ONCE AGAIN COMBINES ELECTROMAGNETIC COMPATIBILITY AND SIGNAL & POWER INTEGRITY INTO ONE INSPIRING SYMPOSIUM

A full, 5-day attendee registration includes:

- Access to all of EMC+SIPI 2026
- Multiple days of EMC+SIPI original papers
- Five days of practical EMC+SIPI Workshops and Tutorials
- Experiments and Demonstrations of fundamental and advanced topics
- Exhibit Hall, showcasing the latest EMC+SIPI products and services
- Welcome Reception
- Gala Event
- Awards Luncheon
- Symposium Proceedings with all Workshop & Tutorial slide presentations and Technical papers

REGISTRATION TYPES

TECHNICAL ATTENDEE:

We offer 5-Day or 1-Day Registrations:
You have access to all EMC and SIPI paper sessions, Workshops & Tutorials, Experiments & Demonstrations, and the Exhibit Hall. There are also special events available, as well as Technical Committee Meetings, Standards Meetings, and networking opportunities.

- The 5-Day registration includes 5 days of technical sessions, 3 day pass to the exhibit hall, Symposium Record, and social events.
- The 1-Day registration includes 1 day of technical sessions, same day pass to the exhibit hall (if open), and the Symposium Proceedings.

EXHIBIT HALL ONLY:

This is an EMC+SIPI exhibition with many technical activities. For adult (age 18+) customers and clients of our exhibitors. **$25/day**.

- Companions/guests may obtain a pass (Basic Badge) through their technical attendee's registration. Anyone under age 18 may be registered as a companion and must be accompanied by a registered adult. A minor release form will need to be completed and submitted before obtaining a badge for anyone under the age of 18.

COMPANIONS/GUESTS:

Our Companions are family and friends of all ages who are accompanying a registered, technical attendee.
We offer two types of badges:

- **Companion Club:** This package will again include a gift, access to the Companion Suite (4 mornings with breakfast), Exhibit Hall pass, and Welcome Reception ticket. Individual registrations are required. **Cost: $270**

  You may sign up your companion within your own registration or they may be registered separately for the **Companion Club**.

EXHIBITOR:

All adult (age 18+) exhibitor staff, reps, and booth workers must register using the link and discount code sent to the Exhibitor/ Sponsor contact to receive an EXHIBITOR ribbon and early access to the Exhibit Hall. Anyone under age 18 must be accompanied by a registered adult and a minor release form submitted prior to obtaining a badge.
There are two badge types:

- **Technical Exhibitor:** receives a full, 5-Day Technical Registration plus EXHIBITOR ribbon.
- **Booth Staff:** receive 3-Day pass to the Exhibit Hall, with early access plus an EXHIBITOR ribbon and access to the welcome reception is included.

2026.emcsipi.org/registration

REGISTRATION INFORMATION

IMPORTANT REGISTRATION INFORMATION

AUTHORS: Symposium registration (IEEE Member or Non-Member) is required by at least one author, or the speaker, before the final paper submission deadline, 22 May 2026. Failing to meet this requirement will result in the paper not being published or presented – no exceptions. Your registration confirmation number will be needed for the final paper submittal.

More details can be found on the AUTHOR/SPEAKER page

More details at the EMC+SIPI 2026 Website AUTHOR/PRESENTER page

ADVANCE REGISTRATION: You must be paid in full by midnight PDT, June 30, 2026 to receive the Advanced rates.

EMC SOCIETY MEMBERS: Special rate for full, 5-Day Technical Registrations only. Your membership must be in good standing and paid in full for 2026. If you are not a member and would like to become a EMC-S member, please **CLICK HERE** or call 1-800-678-IEEE. Please note that you must be a member at the time of registration to receive the member rate.

IEEE MEMBERS: Your membership must be in good standing and paid in full for 2026. Have your member number and current member grade ready when registering. If you are not a member and would like to become an IEEE member, please **CLICK HERE** or call 1-800-678-IEEE. Please note that you must be a member at the time of registration to receive the member rate.

SISTER SOCIETY MEMBERS: Members of IEEE EMC-S Sister Societies are eligible for the discounted EMC-S Member rate at the annual symposium. Contact the Registration Service to obtain this discount.
View a list of the 2026 active Sister Society relationships.

IEEE LIFE MEMBER: There is a further rate reduction for IEEE Life members. IEEE Life Membership is automatically bestowed upon an active IEEE member based on age and years of membership.

EMC-S HONORED MEMBER: You must be an EMC Society Honored Award recipient who was presented with this award in a prior year. No discount code is necessary to register; this is a special rate category.

EMC-S RETIRED OR UNEMPLOYED: EMC-S Retired or Unemployed. Special ADVANCE rate discount for retired / unemployed EMC Society members only. Have your last place of employment and the date of retirement or unemployment ready when registering.

COMPANY GROUP RATE: Sign up to request a company-wide discount code now! We will give each employee a special discounted rate which is roughly 35% off the non-member rate, and over 10% off the EMC-S Member rate! Send an email to: **EMC@iplanitmeetings.com** to receive your Company Discount Code.
Cost: Advance rate is $785 each (Minimum of 10 employees)

FULL-TIME STUDENTS: Special rates for both IEEE members and non-members. You must be enrolled in a full time course of study at a college or university to register in the student categories. Have your college ID number and advisor's name & email ready when registering.

NOTE: Student 5-Day registration packages will include the Symposium Record and tickets to the Welcome Reception & Awards Luncheon. The Gala ticket, however, is NOT included, but may be purchased separately or awarded through volunteering at the symposium.

OTHER INFORMATION:

CERTIFICATE OF PARTICIPATION

A Certificate of Participation may be used to officially document attendance at the Symposium. A personalized certificate will be available at no charge to all registered Symposium attendees and participants. Please visit the Registration Desk to verify your name and affiliation and to pick up your certificate. If you have any questions, please email: **emc@iplanitmeetings.com**.

PAYMENT

Payment is due upon submittal of your registration. Payment can be made by:

- Check (in USD) made out to IEEE EMC+SIPI 2026, and mailed within 2 weeks.
- Credit Card: Visa, MasterCard, American Express, Discover Card.
- Wire Transfer: (Note: Banks usually charge a fee for wire transfers. These are the responsibility of the registrant.)
- Invoice (Government Purchase Order)

Payments by credit card will be charged immediately upon submission of registration. Checks and Wire Transfers must be received within two weeks of the registration date.

You may pay for Companion Club Registration along with your own registration, or via a separate credit card. If you need to pay for tours and social events separately, select "Check" as your payment method and then contact Registration Services at the number on your email confirmation.

CANCELLATION POLICY

For Registration and total order:

- Notice of cancellation must be received in writing via email, sent to **emc@iplanitmeetings.com**. A $50.00 (USD) processing fee will be charged for registrations cancelled by June 14, 2026. For cancellations between July 1 and July 14, 2026, a 50% refund will be given. There will be no refunds after midnight PDT on July 14, 2026.
- If you applied for a Visa and it is denied, a full refund will be issued less a $20 service charge.
- In the event of a full cancellation of the conference, IEEE and EMC Society are not responsible for, and will not reimburse, flight costs and other expenses incurred by the attendee

FOR SOCIAL EVENTS, TOURS AND EXTRAS ONLY

- Notice of cancellation of an individual "extra" item must be received in writing via email, sent to **EMC@iplanitmeetings.com**. A $50.00 (USD) processing fee will be charged for registrations cancelled by June 30, 2026. There will be no refunds after midnight PDT on July 14, 2026.
- The EMC 2026 Symposium Committee reserves the right to cancel any tour that does not meet the minimum requirement. If a tour is cancelled, you will receive a full refund and will be contacted prior to the symposium.

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