

Suntec International Convention & Exhibition Center
14 to 17 May 2018 | Singapore

Final Program

2018 Joint IEEE International Symposium on
Electromagnetic Compatibility & Asia-Pacific
Symposium on Electromagnetic Compatibility



WHERE
**392 SPECIES
OF BIRDS,
NATURE WALKS
& THE GARDEN CITY**
MEET.

Sungei Buloh Wetland Reserve is the perfect getaway for a breath of fresh air. In this diverse ecosystem, you'll find Subaraj Rajathurai seeking inspiration for his many nature tours. Discover Sungei Buloh's extensive network of trails or take a leisurely stroll through the many gardens within the city. Easily immerse yourself in Singapore's natural habitats and numerous parks with explorers like Subaraj. Wander through the concrete and the jungle at [VisitSingapore.com](https://www.visit-singapore.com)



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Organizers and Technical Co-Sponsors

Organized by



Co-organized by



The full support by the IEEE EMC Society Singapore Chapter is highly appreciated.

In Co-operation with



Supported by



Held in



SPONSORSHIP ACKNOWLEDGEMENT

The generous sponsorship by the following organizations is greatly appreciated:

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Gold Sponsors



*Better Jobs For Life
Employment and Employability Institute*

Silver Sponsor



Lanyard Sponsor



WAVE TALKS, EMC ROCKS

Message from Symposium President and General Chair



Love it or hate it: we EMC engineers and researchers probably cannot live without equations. Recall the pseudo-equation used repeatedly in promoting our Joint EMC Symposium:

$$60 + 9 == 2018$$

"Sixty" tells that 2018 marks the 60th IEEE International EMC Symposium; "nine" informs that it is the 9th Asia-Pacific EMC (APEMC) Symposium. These two symposiums come together during 14 to 17 May 2018 to offer a joint IEEE EMC & APEMC Symposium in Singapore.



The first IEEE International EMC Symposium experiences were not easily forgotten, so when were yours? More than fifty years, twenty years, ten years, or one year ago, or just this year. Regardless of your answers, the 2018 Joint EMC Symposium in Singapore will let you experience two flagship EMC symposiums in one place.

Internet makes the virtual distance between us within just a click of a computer mouse or a tap on the touch screen. An email probably travels faster than your walking to a colleague a few cubicles away. We may be indulged in a virtual or cyber comfort zone; at the same time, we may have unabated hunger for traditional face-to-face interactions.

The EMC symposium is such a once-in-a-year chance for us to step out of our virtual comfort zone and have face-to-face interactions using our common language of EMC. Specifically for EMC engineers, researchers, and managers in Asia, the 2018 joint EMC symposium provides a chance that is once in 34 years or merely twice in 60 years of the history of the IEEE International EMC Symposium.

The 2018 joint symposium comes a long way. Five years ago, Prof. Er-Ping Li, the founder of the APEMC, started to plant the seed of the 2018 joint EMC symposium. Very luckily, Singapore is eventually tasked to host it.

Every EMC conference is a story — a story made by you, of you and for you. You, the authors and presenters, are primarily the protagonists. The international steering committee and the technical program committee are directors and editors. The organizing committee is dedicated to set up a performing stage for you, while sponsors and exhibitors bring another rich dimension to the story. More than 500 paper submissions, four keynote speeches, six parallel sessions, 382 paper presentations, seven workshop and six tutorials, seven experiments & demonstrations, delegates from over 33 countries, more than 30 exhibitors, two major symposium social events, and more — these are the essential elements of our 2018 EMC story.

Together with General Co-Chair Dr. Bruce Archambeault and the symposium organizing and technical committees, we sincerely thank all the speakers, authors, delegates, sponsors, exhibitors, volunteers, visitors, companions, and friends.

All of us come together and work together for a memorable 2018 EMC story, which is about to begin when you open this Program Book. Let's enjoy our very own symposium!

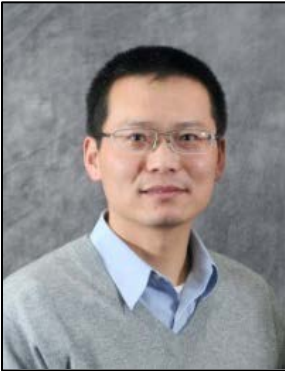
Last, welcome to Singapore, where east meets west! Do find time to savor its uniqueness — its food, culture, greenery, attractions, and many more!

Er-Ping Li
Symposium President

En-Xiao Liu
Symposium General Chair

2018 Joint IEEE EMC & APEMC Symposium

Message from Technical Program Committee Chairs



On behalf of the Technical Program Committee, we welcome you to the 2018 Joint IEEE International Symposium on Electromagnetic Compatibility and Asia Pacific Symposium on Electromagnetic Compatibility (2018 Joint IEEE EMC & APEMC) in Singapore! This symposium is a special venue for the EMC researchers all over the world, especially for those in the Asia Pacific region who may not attend the events in the US and Europe frequently, to meet together as a global family and exchange our visions, progresses, challenges, and outcomes in EMC



research! We are very excited to announce an impressive technical program with high quality, which resulted from the great effort from all the authors/speakers, reviewers, and Technical Program Committee members! As you may find in this final program, there are a variety of technical program activities, from oral/poster paper sessions and workshops/tutorials to plenary talks and topical meetings. We are confident that the technical program can bring many of the leading researchers in our field together for a productive technical exchange!

We want to create a technical program to allow the industry to meet with the academia (then magic occurs). Abstracted-reviewed paper is a format designed to allow our fast-pacing industry engineers and researchers, as well as their academia counterparts, to present the latest and greatest results without the burden of preparing formal papers. All these abstracts will be invited to be extended as practical papers, and submitted to the new venue, IEEE Journal on EMC Practice and Applications, for archived publication.

A selected portion of the full papers presented in this joint symposium will also be invited to a special issue of the IEEE Transactions on EMC, after sufficient extension with new technical contributions.

We have a record high paper submission, over 500 submitted papers including regular, special-session, topical-meeting, and abstract-reviewed ones, from the authors coming from more than 30 countries in the world! We will select 3 best EMC paper awards, 1 best SIPI paper award, and 3 best student paper awards. They will be presented at the gala banquet together with other IEEE EMC awards. Congratulations to all the best paper finalists, which are announced in this final program!

Last but not least, we would like to thank the members of the Technical Program Committee for their willingness to devote long hours to creating a unique and educational program despite the extremely tight schedule due to the two IEEE EMC symposia this year. We would also like to thank all the authors and presenters for their diligence and care in writing and preparing presentations. Welcome again to all the attendees. We hope you enjoy this symposium and take full advantage of the unique learning opportunities it presents.

Sincerely,

Jun Fan and Richard Xian-Ke Gao

Technical Program Chair and Co-Chair

jfan@mst.edu, gaokx@ihpc.a-star.edu.sg

Message from IEEE EMC Society President



Hello and welcome to the very first Joint APEMC & IEEE/EMC Society symposium!

The IEEE Electromagnetic Compatibility (EMC) Society is the world's largest organization dedicated to the development and distribution of information, tools and techniques for reducing electromagnetic interference. The society's field of interest includes standards, measurement techniques and test procedures, instrumentation, equipment and systems characteristics, interference control techniques and components, education, computational analysis, and spectrum management, along with scientific, technical, industrial, professional or other activities that contribute to this field.

It is my privilege and honor to write this message as the new President of the EMC Society. I received the official gavel at the November 2017 Board of Directors meeting in Phoenix. I have some very big shoes to fill, following in the footsteps of Frank Sabath, Bob Scully and many others. I promise to do my best for each and every EMC Society member!

I have had the privilege to work closely with Dr. En-Xiao Liu and Professor Er-Ping Li, as well as all the members of the organizing committee. There is a large number of papers, tutorials and events squeezed into four days. There is something for everyone, and the symposium promises to be a very full few days for the attendees!

The list of workshops, tutorials and technical papers are all on line. There are six parallel workshop/tutorial sessions on Monday covering a wide range of topics in the world of EMI/EMC, as well as six parallel technical paper sessions on Tuesday, Wednesday and Thursday. There will be live experiments and demos as well as an exhibit hall with exhibitors showing their latest product offerings.

Personally, I am looking forward to re-connecting with many colleagues that I have not seen in person lately, as well as meeting many more colleagues. I am sure this will be an exciting week both professionally and personally.

I look forward to meeting you there!

Bruce Archambeault

President, IEEE EMC Society





Symposium Organizing Committee

Symposium President
Er-Ping Li
Zhejiang University
ZJU-UIUC Institute



Workshop Co-Chair
Martin Leung
CST



General Chair
En-Xiao Liu
A*STAR IHPC



Special Program Chair
Chunfei Ye
Intel



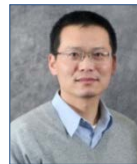
General Co-Chair
Bruce Archambeault



Special Program Co-Chair
Bill Chen



TPC Chair
Jun Fan
Missouri S&T



Experiments & Demonstrations
Chair
Bob Scully
NASA



TPC Co-Chair &
Special Session Chair
Richard Xian-Ke Gao
A*STAR IHPC



Experiments & Demonstrations
Co-Chair
Albert Lee
Rohde & Schwarz



Technical Paper Chair
Xiaoning Ye
Intel Corporation



Experiments & Demonstrations
Chair & Publication Chair
Zaifeng Yang
A*STAR IHPC



Technical Paper Co-Chair
Xing-Chang Wei
Zhejiang University



Finance Co-Chair
Vignesh Rajamani



Special Session Co-Chair
Bob Davis



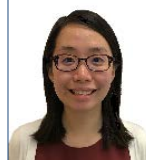
Finance Co-Chair & Web Master
Si-Ping Gao
National University of Singapore



Workshop Chair
John Maas
IBM



Publication Chair &
Publicity Co-Chair
Hui Min Lee
A*STAR IHPC





Symposium Organizing Committee

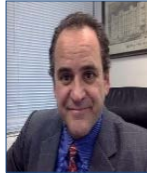
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Sara Gou
Hebei University of Technology



Exhibition Chair
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Mike Violette
Washington Laboratories



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Mobile App Manager
Kelly Scott-Olson
ATG Productions



Publicity Co-Chair
Yan Sun
Peking University



Secretary
Allison Law
CMA International Consultants
Pte Ltd



Symposium Technical Program Committee

The Technical Program Committee (TPC) is led by the TPC Chairs **Prof. Jun Fan and Dr. Richard Xian-Ke Gao**. It consists of the following members.

Brice ACHKIR	SungTek KAHNG	Zhongxiang SHEN
Hideki ASAI	Joungho KIM	Wah Hoon SIEW
Yoshihiro BABA	Wee Jin KOH	Thomas STEINECKE
Thomas BRAXTON	John KRAEMER	Madhavan SWAMINATHAN
Ji CHEN	Frank LEFERINK	Alessio TAMBURRANO
Zhizhang CHEN	Martin LEUNG	David THOMAS
Tiejun CUI	Er-Ping LI	Osami WADA
Bob DAVIS	Ding-bing LIN	Jianqing WANG
Junhong DENG	En-Xiao LIU	Xingchang WEI
Bernd DEUTSCHMANN	Junwei LU	Perry WILSON
Sonia Ben DHIA	John MAAS	Qun WU
Alistair DUFFY	Francescaromana MARADEI	Tzong-Lin WU
Karen DYBERG	Takehiro MORIOKA	Kai XIAO
Amit GAIKWAD	Ivan NDIP	Yanzhao XIE
Yongxin GUO	Antonio ORLANDI	Zhiping YANG
Ran HAO	Sergio PIGNARI	Chunfei YE
Jinliang HE	Bo PU	Xiaoning YE
Fred HEATHER	Yihong QI	Wenyan YIN
Don HEIRMAN	Farhad RACHIDI	Shih-Yi YUAN
Jun HU	Bill RADASKY	Rong ZENG
Shinobu ISHIGAMI	Vesna ROJE	Qingsheng ZENG
Koichi ITO	Frank SABATH	Xianmin ZHANG
Lijun JIANG	Christian SCHUSTER	Yaojiang ZHANG
Tao JIANG	Kye-Yak SEE	Huapeng ZHAO
Jian-Ming JIN	Bidyut SEN	Weijiang ZHAO

Special Session Organizers

Seungyoung Ahn	Chulsoon Hwang	Ener Salinas
Keith Armstrong	Julien Le Kernec	Robert C. Scully
Orlandi Antonio	Wee Jin Koh	Wei E.I. Sha
Hsi-Tseng Chou	Frank Leferink	WH Siew
Andy Degraeve	Lie Liu	Eakhwan Song
Flavia Grassi	Hyun Ho Park	Yoshitaka Toyota
Yuichi Hayashi	Sergio A. Pignari	He-Xiu Xu
Han-Chang Hsieh	Davy Pisssoort	Zhiping Yang
Yongjun Huang	Yihong Qi	Jiafeng Zhou
Zhixiang Huang	William A. Radasky	

Topical Mini-Symposium Organizers

[Topical Symposium] IC-EMC & Signal Integrity

Organizers

Sonia Ben Dhia, INSA Toulouse & LAAS CNRS, Toulouse;
Bernd Deutschmann, Graz University of Technology;
Fabian Vargas, Catholic University-PUCRS; **Er-Ping Li**, Zhejiang University

Scientific Committee

Kamel Abouda, NXP

Adrijan Barić, FER

Alex Boyer, LAAS CNRS

Cheng-Nan Chiu, Da-Yeh University

Genevieve Duchamp, IMS-Bordeaux

Andre Durier, IRT Toulouse

Franco Fiori, Polito Torino

Renaud Gillon, ON Semiconductor

Frederic Lafon, Valeo

Hong Bin Li, IME

Christian Marot, AIRBUS Group

Thomas Ostermann, Univ. Linz

Letícia Pöhls, PUCRS

Mohamade Ramdani, ESEO

Jean M. Redoute, Monash University

Thomas Steinecke, Infineon

Osami Wada, Kyoto University

Jianfei Wu, NUDT

Bertrand Vrignon, NXP

Yaojiang Zhang, Huawei

Shih-Yi Yuan, Feng Chia University

[Topical Symposium] EMC in Railway Systems

Organizers

Kai Sang Lock, Singapore Institute of Technology;

Co-organisers

Sergio A. Pignari, Politecnico di Milano, Italy; **Sai Wing Peter Leung**, City University of Hong Kong;
Ying-Hong Wen, Beijing Jiaotong University, China; **Samuel Chan**, Land Transport Authority, Singapore

Scientific Committee

Chin Tze Wilson Choo, SMRT, Singapore

Kai Wah Chen, Government of the Hong Kong SAR

Ann Tat Kuah, Rohde & Schwarz Asia Pte Ltd

Kam Chuen Lee, Hong Kong Standards and Testing Centre

Keith Ewe Wee Lim, SMRT, Singapore

Wee Han Lim, Singapore Institute of Technology

Keong Andrew Ng, Singapore Institute of Technology

Tee Hui Teo, Singapore University of Technology & Design

Neelakantam Venkatarayalu, Singapore Institute of Technology

Patrick Wong, EMCCL, Hong Kong

[Topical Symposium] Efficient and Accurate Simulation of Multi-Scale EMC & SI/PI Problems

Organizers

Xingchang WEI, Zhejiang University; **Si-Ping GAO**, National University of Singapore;
Shiquan HE, University of Electronic Science and Technology of China;
Huapeng ZHAO, University of Electronic Science and Technology of China

Scientific Committee

Chao-Fu Wang, Temasek Laboratories,
National University of Singapore

Lijun Jiang, University of Hong Kong

En-Xiao Liu, Institute of High Performance
Computing

Richard Xian-Ke Gao, Institute of High
Performance Computing

Sungtek Kahng, Incheon National University

Nan Xia, Huawei Technologies Co., LTD.

[Topical Symposium] Smart Grid & Power Electronics EMC

Organizers

Henglin Chen, Zhejiang University; **Shuo Wang**, University of Florida;
Yanzhao Xie, Xi'an Jiao Tong University; **Flavia Grassi**, Politecnico di Milano

Scientific Committee

Daryl Beerner, Missouri University of Science
and Technology

Fang Luo, University of Arkansas

Wei Chen, Fuzhou University

Jin Meng, Naval University of Engineering

Junping He, Harbin Institute of Technology

Umberto Paoletti, Hitachi Ltd. R&D Group

Dong Jiang, Huazhong University of Science
and Technology

Dave Thomas, The University of Nottingham

Sebastian Koj, Leibniz Universitaet

Ruxi Wang, GE Global Research Center

Frank Leferink, University of Twente

Weidong Zhang, North China Electric Power
University

[Topical Symposium] Biomedical Electromagnetics

Organizers

Koichi Ito, Chiba University; **Jianqing Wang**, Nagoya Institute of Technology;
Shaoying Huang, Singapore Univ. of Technology & Design

Scientific Committee

Ji Chen, University of Houston

Wei Liao, Shanghai University of Engineering
Science

Lorenzo Crocco, National Research Council
of Italy

Yuan-chih(Jim) Lin, MIRDC

Eisuke Hanada, Saga University

Kazuyuki Saito, Chiba University

Asimina Kiourti, Ohio State University

Terence Shie Ping See, Institute for Infocomm
Research, A*STAR

Niels Kuster, ETH Zurich/ IT'IS Foundation

Xiaotong Zhang, Zhejiang University

General Information

Symposium Venue

Suntec Singapore International Convention and Exhibition Centre

Address: 1 Raffles Boulevard,
Suntec City, 039593

www.suntecsingapore.com/

**Free high-speed WiFi (allowing 6,000 visitors to surf the Internet simultaneously)*



Suntec City and its surrounding areas





How to get to Suntec Singapore International Convention and Exhibition Centre



Car

If driving to Suntec Singapore, choose from the following routes for access to carpark:

- Nicoll Highway
- Raffles Boulevard (from Bras Basah Road)
- Temasek Avenue (from Raffles Boulevard)
- Rochor Road exit from East Coast Expressway (ECP)



MRT

Suntec Singapore is easily accessible by MRT stations, Esplanade or Promenade via the Circle Line

- From CC3 Esplanade MRT Station (3 minutes): Take Exit A and follow the signage to Centre
- From CC4 Promenade MRT Station (5 minutes): Take Exit C, walk through Suntec City Mall and follow the signage to Centre



Bus

Getting to Suntec Singapore by bus is relatively easy. Depending on which bus service you are taking, you may choose to board or alight at the following stops around the Centre:

Suntec Singapore:

36, 70M, 111, 133, 133A, 162M, 518, 518A, 700A, 857, NRI, 97, 97A, 70A, 106, 502, 502A, 502B, 518, 551, 578, 581, 577, 580, 575, 576, 579



Taxi

If taking a taxi to Suntec Singapore, alight at the driveway of Centre in front of The Big Picture on Level 1.

Please visit Suntec Singapore official website (www.suntecsingapore.com/) for more information.

Useful Information and Telephone Numbers

Shopping and Dining at Suntec City

Suntec City is segmented into four zones, the North, East and West Wings, as well as the Fountain Court, boasts more than 380 retail establishments across three levels and a basement. Shoppers are spoilt for dining options with over 100 Food & Beverage outlets located within the mall and the charming Sky Garden offering alfresco dining. Suntec City offers a unique one-stop shopping, dining, lifestyle and entertainment experience for all.

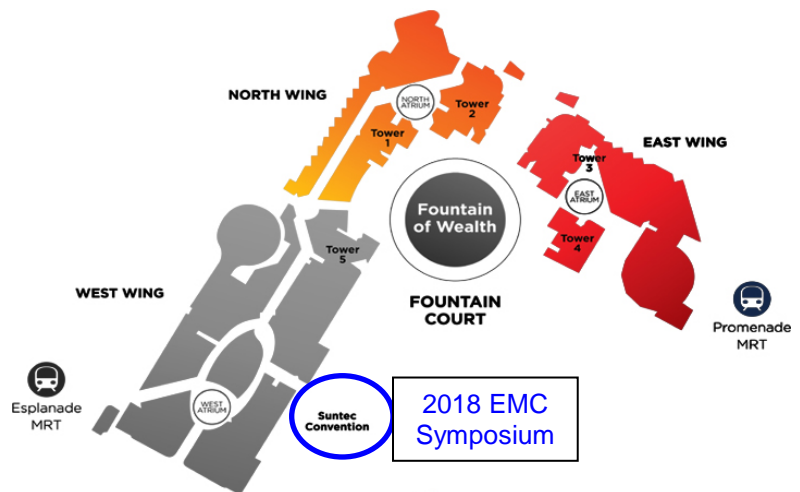
Getting Around

MRT

Suntec Singapore is easily accessible by two MRT stations - CC3 Esplanade or CC4 Promenade. You may check for the exact fare at an MRT station or call TransitLink hotline 1 800 225 5663 for assistance.

Bus

Public bus (air-conditioned) fares are tied to routes. You may check with the bus driver for the exact bus fare of your intended route or call TransitLink hotline 1 800 225 5663 for assistance.



Cab Calling

Dial-A-Cab : (65) 6342 5222
 City Cab : (65) 6552 1111
 SMRT Taxis : (65) 6555 8888

Emergency

Ambulance : 995
 Police : 999
 Fire Brigade : 995

About Singapore

Tourist Hotline : 1800 736 2000
 Flight Information : 1800 542 4422
 Weather Information : (65) 6542 7788

Credit Cards

American Express : 1800 299 1997
 Diners Club : (65) 6416 0800
 JCB : (65) 6734 0096
 MasterCard : 1636 722 7111
 Visa : 800 4481 250



Registration Hours and Floor Plan

Admission to all sessions and hosted functions requires the symposium attendance identification and/or tickets. Please wear your name badge at all times.

Registration time

○ 14 - 17 May, Monday to Thursday: 7:30am – 5:00pm

Registration Counter:

Level 3, Exhibition Hall, Suntec Convention and Exhibition Centre

Registration Enquiry

EMC Singapore Secretariat

Miss Allison Law

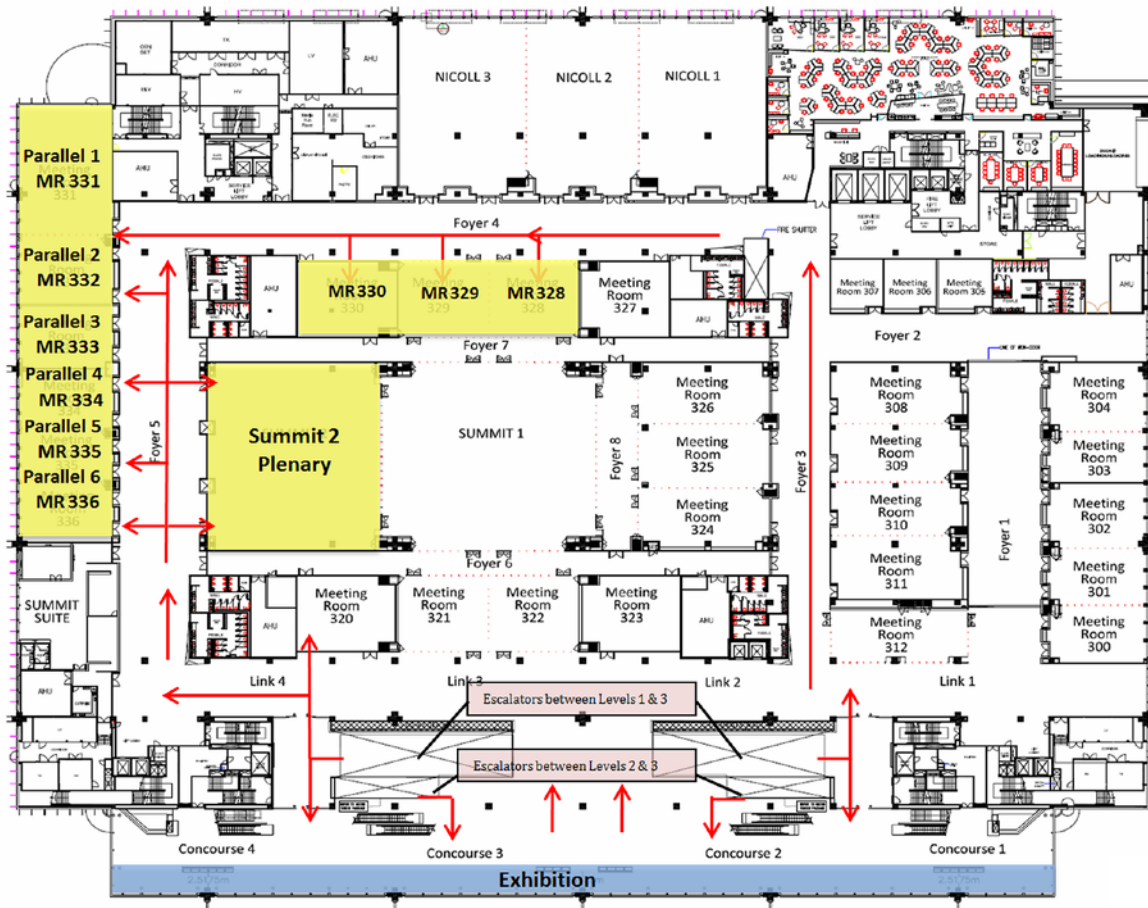
Tel: (65) 6336 2328

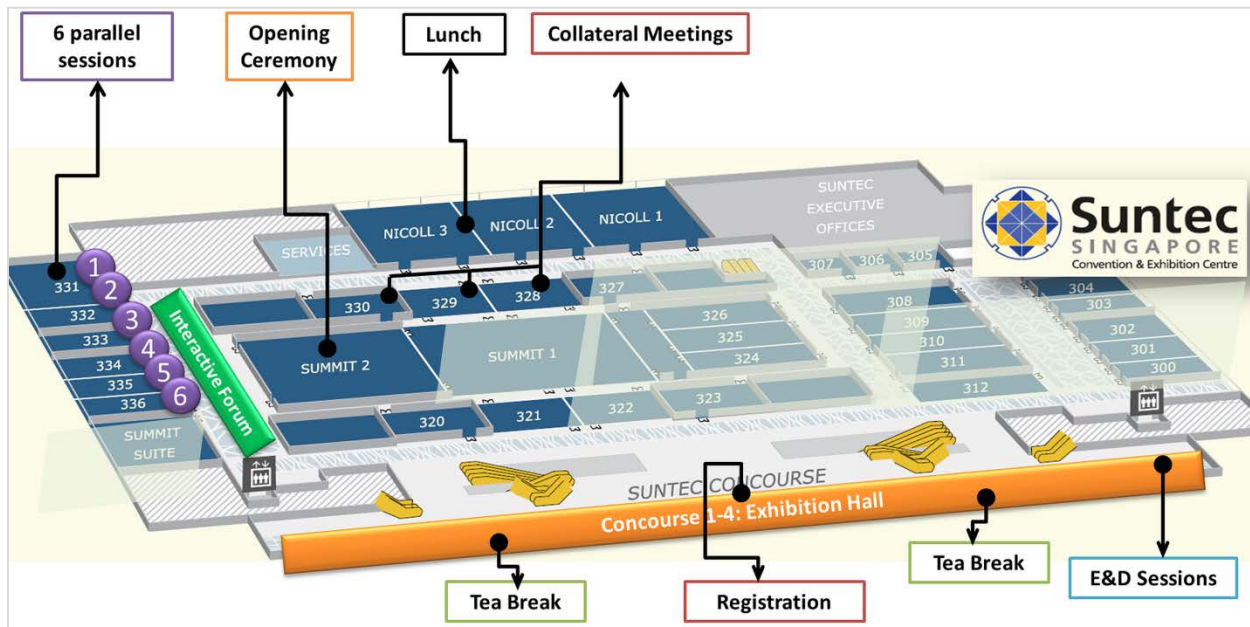
Email: emc@cma.sg

Floor Plan – Level 3: Exhibition Hall and Meeting Rooms

Technical Sessions:	Meeting Rooms (MR) 331, 332, 333, 334, 335, 336
Interactive Forum Sessions:	Foyer outside Room 331 to 336
Opening Ceremony & Plenary Talks I & II:	Summit 2
Plenary Talks III & IV:	Meeting Rooms 334 – 336
Exhibition:	Concourse 1 to 4 (Exhibition Hall)
Collateral Meetings:	Meeting Room 328, 329, 330

Floor Plan –Level 3





Collateral Meetings

Date	Time	Room 328	Room 329	Room 330
Monday (14 May)	Lunch 12:30pm to 1:30pm	EMCS Young Professionals		
Tuesday (15 May)	Breakfast 7am to 8:30am	TC2	TC12	
	AM			
	Lunch 12:30pm to 1:30pm	TC7	TC9	TC10
	PM	Standards meeting		
Wednesday (16 May)	Breakfast 7am to 8:30am	TC4	SC1	SC5
	AM 9am to 11:30am	Risk Management standard (P1848) Meeting		CIGRE WG C4.37
	Lunch 12:30pm to 1:30pm	Risk Management standard (P1848) Meeting	TC5	EMCS Chapter Chair Lunch
	PM 2pm to 5 pm	iNARTE Exam		

Notes:

- EMCS — IEEE EMC Society; TC — Technical Committee of EMCS; SC — Special Committee of EMCS. For a complete list of TCs and SCs, please visit the IEEE EMC Society Website: www.emcs.org/committees/technical_main.html
- Collateral meetings may or may not be organized by the IEEE EMC Society. The EMC Society is neither responsible for nor endorses any collateral meetings organized by non-EMCS groups.
- Some collateral meetings may not open to all conference delegates. Please check with the meeting organizers.

Instructions for Presenters



Oral Presentation

Prepare Your Presentation

Each oral presentation is limited to 20 minutes including questions and answers (Q&As). Length of presentation material should be commensurate with the allocated time. You are requested to load your PowerPoint presentation materials before the session starts.

Determine Your Audio Visual Needs

All meeting rooms are equipped with the following audio-visual equipments:

- One Projector
- One Windows-based PC
- One Screen
- One Laser Pointer

The computers in the meeting rooms are being provided to Windows-based PC users. The PC will be configured with Microsoft Windows operating system as well as with Microsoft Office.

Create a Backup Copy of Your Presentation

We recommend you bring at least 2 copies of your presentation to the meeting in case there is a problem with one of them. Thumb Drive and hard disk are accepted.

Give Your Presentation

Be considerate of the other speakers and audience by staying within your allocated time. The allocated time for your presentation includes a discussion and changeover to the next speaker. Session Chairs will hold you to the allotted time. This is essential to ensure adequate time for questions and discussion as well as adherence to the schedule.



Interactive Forum (Poster) Presentation



Poster sessions will be held at the **foyer outside meeting rooms 331-336 at Level 3.**

Please register at the Registration Desk before proceeding to locate your assigned poster board. To locate your assigned poster board, look for the board marked with your Paper ID.

Prepare your poster

- Each presenter is provided with a 2.4-meter high by 1-meter wide poster board.
- The presentation must cover the same material as the paper.

- Place the title of your paper and your paper number prominently at the top of the poster to allow viewers to identify your paper easily. Indicate 1) the paper's identification number, 2) title, and 3) authors' names.
- Highlight the authors' names, e-mail and address information in case the viewer is interested in contacting you for more information.
- You have complete freedom in displaying your information in figures, tables, text, photographs, etc. in the poster.
- Include the background of your research followed by results and conclusions. A successful poster presentation depends on how well you convey information to an interested audience.

Set-up Your Poster

- Posters should be set up **half an hour** earlier for the respective Interactive Forum sessions
- Please make sure that your paper number is clearly visible on your poster board.
- Presenters are required to be at their posters during their scheduled Open forum session.
- Tapes and other materials are available at the Information Desk, nearby the poster boards.

Remove Your Poster

- Posters must be removed after the respective Open Forum sessions **within half an hour**.
- Posters remaining after these times will be removed. APEMC organizer will not be responsible for posters and materials left on poster boards after the stated hours.

Information Desk

Poster session chairs and staff at the Information Desk will be available to assist you with location and other on-site needs. Tapes and scissors will be available for your use. If you have special needs for your poster presentation, please bring those supplies with you to the meeting.



Symposium Events

**Tickets are required for admission to the events.*

Welcome Reception

Time: 6:30 pm – 8:00 pm, Monday, 14 May 2018

Venue: **Level 3, Exhibition Hall, Suntec Convention and Exhibition Centre**

A warm welcome to all delegates! Let's mingle with each other while enjoy some light food and drink.



Banquet Dinner cum Award Presentation

Time: 7:00 pm – 10:00 pm, Wednesday, 16 May 2018

Venue: **Raffles City Convention Centre, Stamford Ballroom, Level 4**
80 Bras Basah Road, Singapore 189560

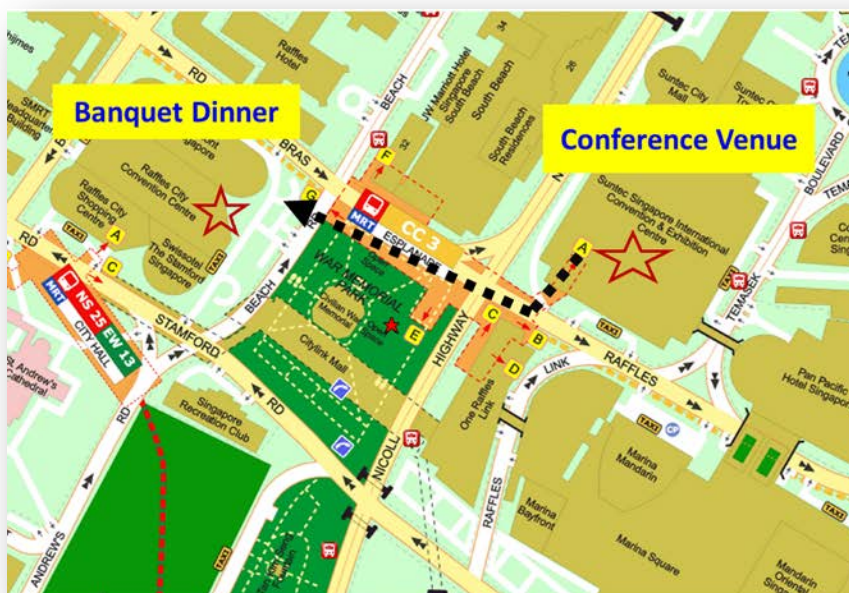
The hotel is situated above one of the major stations (City Hall station) in the Mass Rapid Transit (subway) system and is part of Raffles City complex, which comprises two sister hotels: Fairmont Singapore and Swissôtel The Stamford, Raffles City Convention Centre, Raffles City Shopping Centre and Raffles City Office Tower.

Enjoy a night of get-together with food, entertainment, and award presentation — Best Paper Awards and other technical and service Awards.



From the Symposium Venue to the banquet venue, it is about 8 to 10 minutes' walk.

How to get there (see the 3 options):



Option 1: Walk above ground and cross the War Memorial Park.

Option 2: Through the underpass (indicated in the map). Walk through the Esplanade Link (from Exit A) to basement of Raffles City Shopping Centre (Exit G). Go up to Level 1 and lookout for signage to Swissotel The Stamford.

Option 3: Gather at registration area at 6.30pm and walk over together.

Technical Program at a Glance

Color codes: **Workshops (WS)** **Tutorials (TT)** **Special Sessions (SS)** **Topical Meetings (TM)** **Regular Sessions (TC, SC)** **Plenary Talks** **Opening Ceremony** **Interactive Forum (IF)** **Experiment & Demonstration (ED)**

Date	Time	Room #331	Room #332	Room #333	Room #334	Room #335	Room #336	IF & ED Sessions	Exhibition	
14 May (MO)	08:30am 10:00am	AM-I	WS-01: EMC in Railway Systems	WS-2: Electromagnetic Compatibility for 5G Communications Beyond	TT-01: EMC Fundamentals	TT-03: Introduction to EMI Modeling Techniques	TT-04: Advances in Automotive EMC Test and Measurement	TT-06: Using Reverberation Chambers for EM Experiments and EMI Testing		
	10:00am 10:30am		Tea Break							
	10:30am 12:30pm	AM-II	WS-01: EMC in Railway Systems	WS-2: Electromagnetic Compatibility for 5G Communications Beyond	TT-01: EMC Fundamentals	TT-03: Introduction to EMI Modeling Techniques	TT-04: Advances in Automotive EMC Test and Measurement	TT-06: Using Reverberation Chambers for EM Experiments and EMI Testing		
	12:30pm 01:30pm		Lunch							
	01:30pm 03:30pm	PM-I	WS-03: EMC & EMF Safety Aspects of Wireless Power Transfer in Transportation Systems	TT-02: Protection of Civil Infrastructures Against Intentional EMI	WS-05: Computational Electromagnetics (CEM) for EMC Applications	WS-04: Lightning Protection of Wind Turbines	TT-05: Advances in Antenna Calibration and Measurements for EMC Applications	WS-07: Use of FFT-Based Measuring Instruments in EMI Testing		
	03:30pm 04:00pm		Tea Break							
	04:00pm 06:00pm	PM-II	WS-03: EMC & EMF Safety Aspects of Wireless Power Transfer	TT-02: Protection of Civil Infrastructures Against Intentional EMI	WS-05: Computational Electromagnetics (CEM) for EMC Applications	WS-04: Lightning Protection of Wind Turbines	TT-05: Advances in Antenna Calibration and Measurements for EMC Applications	WS-06: (a) EMC for Automotive WS-06: (b) EMC for Medical Equipment		
6:30pm		Welcome Reception (6:30pm – 8:00pm)								
15 May (TU)	08:30am 10:10am	AM-I	TC-10: SI/PI (I)	TM-02: EMC in Railway Systems (I)	TC-02: EMC Measurement (I)	TC-09: Computational Electromagnetics (I)	TC-12: EMC for Emerging Wireless Technology (I)	TM-04: EMC in Power Electronics and Smart Grid (I)		
	10:10am 10:30am		Tea Break							
	10:30am 12:30pm	AM-II	Opening Ceremony of 2018 Joint IEEE EMC & APEMC <i>Venue: Summit 2, Level 3</i> <i>Chairs: Er-Ping Li, Symposium President; En-Xiao Liu, Symposium General Chair</i> Plenary Talk I: Chromebooks, USB-C and Google PI/SI Research <i>Mark Hayter, Director, Google, USA</i> Plenary Talk II: Frontiers in Computational Time Reversal for Electromagnetic Synthesis <i>Wolfgang Hoefler, University of Victoria, Canada</i>							
	12:30pm 01:30pm		Lunch							
	01:30pm 03:30pm	PM-I	TC-10: SI/PI (II)	SS-07: Aerospace EMC	SS-10: Techniques & Measures to Manage Risks With Regard to EM Disturbances	TC-09: Computational Electromagnetics (II)	SS-05: Potential Electromagnetic Techniques for Booming Wireless Communications (I)	TC-05: EM Information Leakage	3:00pm-5:00pm Interactive forum I	
	03:30pm 04:00pm		Tea Break							
04:00pm 06:00pm	PM-II	TM-01: IC EMC (I)	SS-08: Simulation and testing for Automotive EMC (I)	SS-12: Electromagnetic Shielding Technology for Mobile Devices	TC-04: EMI Control Methods	SS-05: Potential Electromagnetic Techniques for Booming Wireless Communications (II)	TC-05: Lightning and System Protection	E & D Session I		

Technical Program at a Glance

Color codes: Workshops (WS) | Tutorials (TT) | Special Sessions (SS) | Topical Meetings (TM) | Regular Sessions (TC, SC) | Plenary Talks | Opening Ceremony | Interactive Forum (IF) | Experiment & Demonstration (ED)

Date	Time		Room #331	Room #332	Room #333	Room #334	Room #335	Room #336	Poster Sessions	Exhibition		
16 May (WE)	08:30am - 10:10am	AM-I	TC-10: SI/PI (III)	TC-06: Spectrum	TC-09: CEM and EMI	TC-09: Computational Electromagnetics (III)	SS-04: Emerging Technologies and EMC	SS-13: EMC Issues Related to Common-mode Noise	08:30pm-10:30pm E&D Session II	Open		
	10:10am - 10:30am		Tea Break									
	10:30am - 12:30pm	AM-II	TC-10: SI/PI (IV)	SS-03: Wireless Technology and Wireless Power Transfer (I)	TC-02: EMC Measurement (II)	Time: 11:00am – 12:30pm Plenary Talk III: Marriage of Computational Electromagnetics and Electromagnetic Compatibility <i>Weng Cho Chew, Purdue University, USA</i> Plenary Talk IV: Wireless Chip Area Network (WCAN): A New Paradigm for RF Microelectronics and Radio Communications <i>Yueping Zhang, Nanyang Technological University, Singapore</i>			12:00pm-2:00pm Interactive forum II			
	12:30pm - 01:30pm		Lunch								E&D Session III	
	01:30pm - 03:30pm	PM-I	TM-01: IC EMC (II)	SC-07: Aeronautics and Space EMC	SS-09: Hardware Security for IoT Devices (I)	TC-04: EMI	TC-12: EMC for Emerging Wireless Technology (II)	SS-01: EMC for Wind Farms and Solar PV Plants	3:00pm-5:00pm Interactive forum III & Best Student Paper Session			
	03:30pm - 04:00pm		Tea Break									
	04:00pm - 05:20pm	PM-II	TM-05: Biomedical Electromagnetic (I)	SS-08: Simulation and testing for Automotive EMC (II)	SS-11: Advance measurement technologies for 5G (I)	TC-09: Computational Electromagnetics (IV)	TC-11: Nano & Advanced Materials	TC-05: IEMI and Transients	E&D Session IV			
07:00pm - 10:00pm		Symposium Banquet Dinner Cum Award Presentation (7pm – 10pm)										
17 May (TH)	08:30am - 10:10am	AM-I	TM-05: Biomedical Electromagnetic (II)	TM-02: EMC in Railway Systems (II)	SS-11: Advance measurement technologies for 5G (II)	TM-03: Efficient and Accurate Simulation of Multi-Scale EMC & SI/PI Problems (I)	SS-05: Potential Electromagnetic Techniques for Booming Wireless Communications (III)	TM-04: EMC in Power Electronics and Smart Grid (II)		Open		
	10:10am - 10:30am		Tea Break									
	10:30am - 12:30pm	AM-II	TC-10: SI/PI (V)	SS-03: Wireless Technology and Wireless Power Transfer (II)	SS-09: Hardware Security for IoT Devices (II)	TM-03: Efficient and Accurate Simulation of Multi-Scale EMC & SI/PI Problems (II)	SS-05: Potential Electromagnetic Techniques for Booming Wireless Communications (IV)	TM-04: EMC in Power Electronics and Smart Grid (III)				
	12:30pm - 01:30pm		Lunch									
	01:30pm - 03:30pm	PM-I	SS-02: Metamaterials /metasurfaces for Manipulations of Electromagnetic Waves	SS-14: Radio Frequency Remote Sensing	TC-02: EMC Measurement (III)	TM-03: Efficient and Accurate Simulation of Multi-Scale EMC & SI/PI Problems (III)	SS-06: Design and Modeling of Emerging EM Components and Devices (I)	TC-05: Electrostatic Discharge and Arcs				
	03:30pm - 03:50pm		Tea Break									
03:50pm - 05:30pm	PM-II	TC-10: SI/PI (VI)	TC-04: EMI/EMC	TC-01/02/03: EMC Management, Measurement and Environment	TM-03: Efficient and Accurate Simulation of Multi-Scale EMC & SI/PI Problems (IV)	SS-06: Design and Modeling of Emerging EM Components and Devices (II)	TC-07: Low Frequency EMC		Closed			
-- The End --												



Plenary Talks

Plenary Talk I	Chromebooks, USB-C and Google PI/SI Research
TIME	11:00am – 11:45am, Tuesday, 15 May 2018
VENUE	Summit 2, Level 3
SPEAKER	Mark Hayter Senior Engineering Director, Google

ABSTRACT

The Chromebook is a new, faster computer. It starts in seconds, and offers thousands of apps, including Web applications and Android apps. The Chrome OS operating system is automatically updated to ensure the computer remains secure and gets better over time. The Chrome OS hardware team makes Chromebook reference designs and develops new technologies for them. The team was heavily involved in the USB-C development and Google was an early adopter in laptops, tablets and phones. The USB-C connector is used to provide up to 100W of power, high speed signals for data and video, and low speed signals for configuration. It therefore presents many SI, PI and EMC challenges. Starting from a system view of USB-C the presentation will introduce some of the research done by the Google Signal Integrity and Power teams as they implemented it in devices. It will conclude with some forward-looking speculation on SI tools.

BIOGRAPHY



Mark Hayter is Senior Engineering Director in the Chrome OS Hardware team at Google. The team is responsible for reference implementations and developing new technologies for Chromebooks. Prior to that he was involved in systems architecture at several semiconductor companies, being VP of Systems Engineering at P.A. Semi, Inc. (acquired by Apple Inc.), Senior Manager of Hardware Systems Engineering at Broadcom Corporation and System Architect at SiByte, Inc. Earlier, Hayter was at the Digital Equipment Corporation Systems Research Center. Hayter holds a PhD from the University of

Cambridge Computer Laboratory.

Plenary Talk II	Frontiers in Computational Time Reversal for Electromagnetic Synthesis
TIME	11:45am – 12:30pm, Tuesday, 15 May 2018
VENUE	Summit 2, Level 3
SPEAKER	Wolfgang J. R. Hoefer Professor Emeritus, University of Victoria, Canada President (1967 - 2017), Faustus Scientific Corporation

ABSTRACT

Time reversal may strike us as a frivolous idea since we are unable to reverse the flow of time in our universe. However, our computational models of the laws of physics – notably our models of wave propagation – empower us to commute freely between virtual past and virtual future, and thus to interchange cause and effect. This capability has opened new frontiers in acoustic and electromagnetic wave engineering. Over the past twenty-five years, scientists and engineers have developed novel concepts that exploit the time symmetry of the wave equation and the resulting ability to reverse causality in the virtual realm. The talk will explore the features and challenges of computational time reversal, demonstrate the methodology by means of live simulation examples, and discuss its applications in real-world engineering, notably in imaging, remote sensing, EMC, and electromagnetic field structure synthesis.

BIOGRAPHY



Wolfgang J. R. Hoefer is Professor Emeritus at the University of Victoria, Canada. He studied Electrical Engineering at the RWTH Aachen, Germany, and the University of Grenoble, France. In 1969 he joined the University of Ottawa, Canada, as a Faculty member and was Chair of Electrical Engineering from 1978 to 1981. In 1992 he joined the University of Victoria as Professor and NSERC Industrial Research Chair in RF Engineering, and founded the Computational Electromagnetic Research Laboratory (CERL) which he directed until 2006. From 2009 to 2012 he was Principal

Scientist and I³ Department Director at the Institute of High Performance Computing, Singapore. He was President of Faustus Scientific Corporation from 1967 to 2017. He held visiting appointments at the Universities of Grenoble, Rome Tor Vergata, Nice-Sophia Antipolis, Perugia, Munich and Duisburg, the Ferdinand Braun Institute in Berlin, the ETH Zürich, AEG-Telefunken, CRC Ottawa, the Agency of Science, Technology and Research (A*STAR) of Singapore, and the Georgia Institute of Technology, Atlanta, USA.

He is a Life Fellow of IEEE, and a Fellow of the Royal Society of Canada, the Canadian Academy of Engineering, the German Academy of Science and Engineering (ACATECH), the Advanced System Institute of British Columbia, and the Electromagnetics Academy (MIT). He served as MTT Distinguished Microwave Lecturer, and received the MTT Distinguished Educator Award, the MTT Pioneer Award, and the McNaughton Gold Medal of IEEE Canada. He is also the recipient of the Peter B. Johns Prize, the ACES Mainstay Award, and the A*STAR Most Inspiring Mentor Award. He holds an honorary doctorate (Dr.-Ing. h.c.) from the Technische Universität München, Germany.

Plenary Talk III **Marriage of Computational Electromagnetics and Electromagnetic Compatibility**

TIME 11:00am – 11:45am, Wednesday, 16 May 2018

VENUE Rooms 334, 335, 336

SPEAKER **Weng Cho Chew**
Professor, Purdue University, USA

ABSTRACT

In electromagnetic compatibility, reside some of the most complicated electromagnetic analysis problems. In designing highly complex electromagnetic systems, some of the side effects of coupling, radiation, and interference are unintended. The challenge in EMC research is the mitigation of these unwanted side effects. These side effects generally give rise to the deterioration of the performance or even failure of a system.

Given symptoms of degraded performance, an EMC engineer is tasked to identify the root causes and find remedies. Hence, an EMC engineer to a dysfunctional electrical system is very much like a doctor to a malaise human body.

To help EMC engineers identify the root-cause of the symptoms, it is best to provide EMC engineers with as much data as possible. These data can be collected experimentally with broadband or time-domain techniques. Field scanning techniques have been used to collect these data, and they can be painfully slow. A prerogative is to design systems that can expedite the collection of these data.

These data can be collected passively or actively. In passive data collection, as little interference to the operation of the system is done. In active data collection, signals can be injected into the system to precipitate different responses from the system. Also, to get as much response from the system, data should be collected to be as close to the source of the noise as possible.

Given the massive amount of data that these experiments can generate, the onus is upon the theorists to analyze them and make sense of these data. There are a whole sleuth of methods that can be used to analyze these data. One possible candidate is the characteristic mode analysis. Another possibility is the use of vector fitting method, model order reduction, and compact modeling to come up with simple models that can explain the character of the data collected. Synthesis methods can also be used to construct these simple models to match the experimental data. Also, many methods developed in inverse scattering/source can be used to help advance this field.

Analysis methods for EMC are generally slow. Hence, pressing research to expedite these analysis methods is needed. Fast algorithms in both CEM and inverse analysis are needed. To expedite the analyses, advancement in large scale computing such as massively parallel computing can be used. Moreover, ideas from recent advances in expert systems and machine learning can transferred to EMC to solve pressing difficult problems.

BIOGRAPHY



W.C. Chew received all his degrees from MIT. His research interests are in wave physics, specializing in fast algorithms for multiple scattering imaging and computational electromagnetics in the last 30 years. His recent research interest is in combining quantum theory with electromagnetics, and differential geometry with computational electromagnetics. After MIT, he joined Schlumberger-Doll Research in 1981. In 1985, he joined U Illinois Urbana-Champaign, was then the director of the Electromagnetics Lab from 1995-2007. During 2000-2005, he was the Founder Professor, 2005-2009 the YT Lo Chair Professor, and 2013-2017 the Fisher Distinguished Professor. During 2007-2011, he was the Dean of Engineering at The University of Hong Kong. He joined Purdue U in August 2017 as a Distinguished Professor. He has co-authored three books, many lecture

notes, over 400 journal papers, and over 600 conference papers. He is a fellow of various societies, and an ISI highly cited author. In 2000, he received the IEEE Graduate Teaching Award, in 2008, he received the IEEE AP-S CT Tai Distinguished Educator Award, in 2013, elected to the National Academy of Engineering, and in 2015 received the ACES Computational Electromagnetics Award. He received the 2017 IEEE Electromagnetics Award. He now is the 2018 IEEE AP-S President.

Plenary Talk IV	Wireless Chip Area Network (WCAN): A New Paradigm for RF Microelectronics and Radio Communications
TIME	11:45am – 12:30pm, Wednesday, 16 May 2018
VENUE	Rooms 334, 335, 336
SPEAKER	Yueping Zhang Professor, Nanyang Technological University, Singapore

ABSTRACT

Considering the trend of wireless area network shrinkage in coverage to increase capacity and speed, Zhang proposed the concept of wireless chip area network (WCAN) in 2002. WCAN uses wireless technology to overcome the bottleneck of wired technology to realize interconnects among circuit cores in a chip (Intra-chip) or among different chips in a module (Inter-chip). WCAN, as a new paradigm for wireless communications and RF microelectronics, has begun to receive considerable attention recently. This talk will provide an introduction to WCAN. Emphasis will be given to the fundamental research in the characterization of chip-scale radio channels for WCAN. It is shown that the guided waves dominate the chip-scale radio propagation. This talk will also touch on some key issues in the design of WCAN using modern integrated circuit technology such as coupling mechanisms and effects between on-chip antenna and inductor or coplanar waveguide.

BIOGRAPHY

Yueping Zhang is a full Professor of Electronic Engineering with the School of Electrical and Electronic Engineering at Nanyang Technological University, Singapore, a Distinguished Lecturer of the IEEE Antennas and Propagation Society (IEEE AP-S), and a Fellow of IEEE.

Prof. Zhang was a Member of the Field Award Committee of the IEEE AP-S (2015-2017), an Associate Editor of the IEEE Transactions on Antennas and Propagation (2010-2016), and the Chair of the IEEE Singapore MTT/AP joint Chapter (2012). Prof. Zhang was selected by the Recruitment Program of Global Experts of China as a Qianren Scholar at Shanghai Jiao

Tong University (2012). He was awarded a William Meng Visiting Fellowship (2005) and appointed as a Visiting Professor (2014) by the University of Hong Kong.

Prof. Zhang has published numerous papers, including two invited papers in the Proceedings of the IEEE and one invited paper in the IEEE Transactions on Antennas and Propagation. He holds 7 US patents. He received the Best Paper Award from the 2nd IEEE/IET International Symposium on Communication Systems, Networks and Digital Signal Processing, July 18–20, 2000, Bournemouth, U.K., the Best Paper Prize from the 3rd IEEE International Workshop on Antenna Technology, March 21–23, 2007, Cambridge, U.K., and the Best Paper Award from the 10th IEEE Global Symposium on Millimeter-Waves, May 24–26, 2017, Hong Kong, China. He received the prestigious IEEE AP-S Sergei A. Schelkunoff Prize Paper Award in 2012.

Prof. Zhang has made pioneering and significant contributions to the development of the antenna-in-package (AiP) technology that has been widely adopted by chip makers for millimeter-wave applications. His current research interests include the development of antenna-on-chip (AoC) technology and characterization of chip-scale propagation channels at terahertz for wireless chip area network (WCAN).

Overview of Tutorial & Workshop Program

Color codes: Workshops (WS) Tutorials (TT)

Date	Time		Room #331	Room #332	Room #333	Room #334	Room #335	Room #336
14 May (MO)	08:30am 10:00am	AM-I	WS-01: EMC in Railway Systems	WS-2: Electromagnetic Compatibility for 5G Communications Beyond	TT-01: EMC Fundamentals	TT-03: Introduction to EMI Modeling Techniques	TT-04: Advances in Automotive EMC Test and Measurement	TT-06: Using Reverberation Chambers for EM Experiments and EMI Testing
	10:00am 10:30am		Tea Break					
	10:30am 12:30pm	AM-II	WS-01: EMC in Railway Systems	WS-2: Electromagnetic Compatibility for 5G Communications Beyond	TT-01: EMC Fundamentals	TT-03: Introduction to EMI Modeling Techniques	TT-04: Advances in Automotive EMC Test and Measurement	TT-06: Using Reverberation Chambers for EM Experiments and EMI Testing
	12:30pm 01:30pm		Lunch					
	01:30pm 03:30pm	PM-I	WS-03: EMC & EMF Safety Aspects of Wireless Power Transfer in Transportation Systems	TT-02: Protection of Civil Infrastructures Against Intentional EMI	WS-05: Computational Electromagnetics (CEM) for EMC Applications	WS-04: Lightning Protection of Wind Turbines	TT-05: Advances in Antenna Calibration and Measurements for EMC Applications	WS-07: Use of FFT-Based Measuring Instruments in EMI Testing
	03:30pm 04:00pm		Tea Break					
	04:00pm 06:00pm	PM-II	WS-03: EMC & EMF Safety Aspects of Wireless Power Transfer	TT-02: Protection of Civil Infrastructures Against Intentional EMI	WS-05: Computational Electromagnetics (CEM) for EMC Applications	WS-04: Lightning Protection of Wind Turbines	TT-05: Advances in Antenna Calibration and Measurements for EMC Applications	WS-06: (a) EMC for Automotive WS-06: (b) EMC for Medical Equipment
	6:30pm		Welcome Reception (6:30pm – 8:00pm)					

Tutorials

TUTORIAL TT-01	EMC Fundamentals
TIME	8:30am – 12:30pm, Monday, 14 May
VENUE	Room 333
ORGANIZERS	Kye Yak See, Nanyang Technological University, Singapore Frank Leferink, THALES / University of Twente, Netherlands
SPEAKERS	Kye Yak See, Nanyang Technological University, Singapore Richard Xian-Ke Gao, Institute of High Performance Computing, A*STAR, Singapore Frank Leferink, THALES / University of Twente, Netherlands Lin Biao Wang, Continental Automotive, Singapore

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 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.

BIOGRAPHIES OF ORGANIZERS



Dr. Kye Yak See received the B. Eng. degree (1st Class Hons) from the National University of Singapore and the Ph. D degree from Imperial College London in 1986 and 1997, respectively. Between 1986 and 1991, he was with Singapore Technologies Electronics as a Senior Engineer. From 1991 to 1994, he held the position of Lead Design Engineer in ASTEC Custom Power, Singapore. He joined Nanyang Technological University (NTU), Singapore, in 1997, as a faculty member. He is currently a tenured Associate Professor in the School of Electrical and Electronic Engineering, NTU. He also holds concurrent appointment as the Director of Electromagnetic Effects Research Laboratory (EMERL) jointly funded by DSO National Laboratories, A*STAR and NTU. His research interests are power and signal integrity, electromagnetic compatibility (EMC) and real-time condition monitoring of electrical infrastructure. He was the founding chairs of the IEEE Singapore EMC Chapter and IEEE Singapore Aerospace and Electronic Systems (AES)/Geoscience and Remoting Sensing (GRSS) Joint Chapter. He served as the Organizing Committee Chairs for 2006 EMC Zurich Symposium and 2008 Asia Pacific EMC Conference; and General Chairs for 2011 International Symposium of Integrated Circuits (ISIC 2011) and 2015 Asia Pacific Synthetic Aperture Radar Conference (APSAR 2015). He has been the Technical Editor of the IEEE EMC Magazine since January 2012. From 1 July 2016, he was appointed as Director of SMRT-NTU Smart Urban Rail Corporate Laboratory jointly funded by National Research Foundation (NRF), SMRT and NTU.



Frank Leferink (M'91–SM'08) received his B.Sc. in 1984, M.Sc. in 1992 and his PhD in 2001, all electrical engineering, at the University of Twente, Enschede, The Netherlands. He has been with THALES in Hengelo, The Netherlands since 1984 and is now the Technical Authority EMC. He is also manager of the Network of Excellence on EMC of the THALES Group, with over 100 EMC engineers scattered over more than 20 units, worldwide. In 2003 he was appointed as (part-time, full research) professor, Chair for EMC at the University of Twente. At the University of Twente he lectures the courses Transmission Media, and EMC, and manages several research projects, with 2 researchers and 6 PhD student-researchers. Over 200 papers have been published at international conferences or peer reviewed journals, and he holds 5 patents.

Prof. Leferink is past-president of the Dutch EMC-ESD association, Chair of the IEEE EMC Benelux Chapter, member of ISC EMC Europe, and associate editor of the IEEE Transactions on EMC.

Introduction

Kye Yak See, Nanyang Technological University, Singapore

Parasitic Effects of Components and Interconnects, Capacitance and Inductance

Richard Xian-Ke Gao, Institute of High Performance Computing, Agency for Science, Technology and Research, Singapore

Shielding

Frank Leferink, THALES / University of Twente, Netherland

EMI Filters

Kye Yak See, Nanyang Technological University, Singapore

EMC Fundamentals PCB Design

Lin Biao Wang, Continental Automotive, Singapore



TUTORIAL TT-02	Protection of Civil Infrastructures Against Intentional EMI
TIME	01:30pm – 06:00pm, Monday, 14 May
VENUE	Room 332
ORGANIZERS	Frank Sabath, Bundeswehr Research Institute for Protective Technologies and CBRN Protection (WIS), Germany Frank Leferink, THALES / University of Twente, Netherlands
SPEAKERS	Frank Sabath, Bundeswehr Research Institute for Protective Technologies and CBRN Protection (WIS), Germany William A. Radasky, Metatech Corporation, USA Frank Leferink, THALES / University of Twente, Netherlands Wen-Yan Yin, Zhejiang University, Hangzhou, China Giuseppina Dall'Armi-Stoks, Defence Science & Technology Group, Edinburgh, Australia

ABSTRACT

Intentional EMI is becoming more and more a threat to modern society because the availability of I-EMI is increasing, while modern electronic systems are becoming more vulnerable. Due to the widespread use of wireless systems this risk is increasingly important. Our civil infrastructures depend on the use of modern communication systems, and several research projects have been recently carried out. In this tutorial we will give an overview of high-power and low-power I-EMI threats, the risks to civil infrastructures and preventive actions.

BIOGRAPHIES OF ORGANIZERS



Frank Sabath (M'94–SM'04). He received the Dipl.-Ing. Degree in electrical engineering from the University of Paderborn, Paderborn, Germany, in 1993, and the Dr.-Ing. degree from the Leibniz University of Hannover, Hannover, Germany, in 1998. Since 1998, he has been with the Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support (BAAINBw). From 2011 to 2017 he was head of the directorate on Nuclear Effects, High-Power Electromagnetics and Fire Protection of the Bundeswehr Research Institute for Protective Technologies and CBRN-Protection (WIS), Munster, Germany. In 2017 he took over responsibility as head of the directorate on Detection. Dr.

Sabath is Senior Lecturer in the field EMI Risk Management at the Leibniz University Hannover, Germany. He is the author or coauthor of more than 150 papers published in international journals and conference proceedings. His research interests include investigations of electromagnetic field theory, High-Power Electromagnetics, investigations of short pulse interaction on electronics, and impulse radiation.

Dr. Sabath is the immediate past president of the IEEE Electromagnetic Compatibility (EMC) Society, and a member of Antennas and Propagation (AP), Microwaves Theory and Techniques (MTT) societies, and of URSI Commission E.



Frank Leferink (M'91–SM'08) received the B.Sc., M.Sc., and Ph.D. degrees in electrical engineering from the University of Twente, Enschede, The Netherlands, in 1984, 1992, 2001, respectively. He has been with THALES in Hengelo, The Netherlands since 1984 and is now the Technical Authority EMC. He is also manager of the Network of Excellence on EMC of the THALES Group, with over 100 EMC engineers scattered over more than 20 units, worldwide. In 2003 he was appointed as (part-time, full research) professor, Chair for EMC at the University of Twente. At the University of Twente he lectures the courses Transmission Media, and EMC, and manages several research projects, with 2 researchers and 6 PhD student-researchers. Over 200 papers have been published at international conferences or peer reviewed journals, and he holds 5 patents.

Prof. Leferink is past-president of the Dutch EMC-ESD association, Chair of the IEEE EMC Benelux Chapter, member of ISC EMC Europe, Chairman of EMC Europe 2018 (Amsterdam), member of the Board of Directors of the IEEE EMC Society, and associate editor of the IEEE Transactions on Electromagnetic Compatibility and the IEEE Journal on Electromagnetic Compatibility Practice and Applications (JEMCPA).

Introduction

Description of the IEMI Threat

Frank Sabath, Bundeswehr Research Institute for Protective Technologies and CBRN Protection (WIS), Germany

Review of IEMI Standardization

William A. Radasky, Metatech Corporation, USA

IEMI Risk Assessment at the System Level

Frank Sabath, Bundeswehr Research Institute for Protective Technologies and CBRN Protection (WIS), Germany

Vulnerability of Wireless Infrastructure to IEMI

Frank Leferink, THALES / University of Twente, Netherlands

IEMI Effects: From Measurements to Simulation

Wen-Yan Yin, Zhejiang University, China

Vulnerability of Autonomous Vehicles to Intentional EMI

Giuseppina Dall'Armi-Stoks, Defence Science & Technology Group, Australia

Conclusion

Frank Sabath, Bundeswehr Research Institute for Protective Technologies and CBRN Protection (WIS), Germany



TUTORIAL TT-03	Introduction to EMI Modeling Techniques
TIME	8:30am – 12:30pm, Monday, 14 May
VENUE	Room 334
ORGANIZERS	Bruce Archambeault, Missouri University of Science and Technology/IBM, USA
SPEAKERS	Matthias Troscher, CST AG, Germany Patrick Deroy, CST of America, USA Bruce Archambeault, Missouri University of Science and Technology/IBM, USA Chuck Bunting, Oklahoma State University, USA Christian Schuster, Hamburg University of Technology, Germany Lijun Jiang, Hong Kong University, China

ABSTRACT

This tutorial will provide an introduction to all of the commonly used numerical EMC modeling techniques. It is intended to provide EMC engineers who are interested in learning the basics of these modeling techniques a fundamental understanding of all the different techniques, without the need for detailed math. Practicing modelers will also benefit from learning the fundamentals of modeling techniques they are currently not using. Each technique will be presented along with their strengths and weakness, so engineers can decide which techniques are appropriate for their types of problems.

Primary Audience: Attendees who are new to computational electromagnetic modeling and are looking for an overview of the popular modeling techniques and the advantages and disadvantages of each of them.

Secondary Audience: Attendees with some modeling experience, who have run into problems and realize that they need a deeper understanding of how the various techniques work to know where the limitations are.

BIOGRAPHIES OF ORGANIZERS



Dr. Bruce Archambeault is an IEEE Fellow, an IBM Distinguished Engineer Emeritus and an Adjunct Professor at Missouri University of Science and Technology. He received his Ph. D. from the University of New Hampshire in 1997. His doctoral research was in the area of computational electromagnetics applied to real-world EMC problems. He has taught numerous seminars on EMC and Signal Integrity across the USA and the world, including the past 15 years at Oxford University.

Dr. Archambeault has authored or co-authored a number of papers in computational electromagnetics, mostly applied to real-world EMC applications. He currently serves as the President of the EMC Society. He is the author of the book "PCB Design for Real-World EMI Control" and the lead author of the book titled "EMI/EMC Computational Modeling Handbook".



Matthias Tröscher received a Diploma in physics from the Technical University Munich, Germany, in 1994. In 2000, he got a Ph.D. degree in the Doctoral Program of Engineering Sciences from the Johannes Kepler University Linz, Austria, for his research at BMW AG, Munich, on radar technology and signal analysis for automotive pre-crash detection. Matthias has been IEEE EMC Society member since 2000, vice chair of the IEEE German EMC chapter since 2016 and vice chair of TC-9 Computational Electronics since 2016. In 2009 he joined CST AG in Munich where he evolved from software developer to application engineer, then to sales manager and finally to business development manager for

Germany, Austria and Switzerland. His main interest is on signal integrity SI, power integrity PI, and electromagnetic compatibility EMC analysis with focus on the automotive industry. In this role, Matthias has co-organized several automotive conferences in Korea, Germany and the US. He has published several articles in magazines and co-authored various papers for automotive workshops.

Transmission Line Matrix (TLM) Method

Patrick Deroy, CST of America, Framingham, MA, USA

Introduction to the Finite-Difference Time-Domain (FDTD) Technique

Bruce Archambeault, Missouri University of Science and Technology/IBM, USA

Introduction to the Finite Element Method

Chuck Bunting, Oklahoma State University, USA

The Method of Moments in EMC Modeling and Simulation

Christian Schuster, Hamburg University of Technology, Germany

The Partial Element Equivalent Circuit Method

Lijun Jiang, Hong Kong University, Hong Kong, China



TUTORIAL TT-04	Advances in Automotive EMC Test and Measurement
TIME	8:30am – 12:30pm, Monday, 14 May
VENUE	Room 335
ORGANIZER	Janet O'Neil, ETS-Lindgren, USA
SPEAKERS	Flavia Grassi, Politecnico di Milano, Italy Garth D'Abreu, ETS-Lindgren, USA Jianmei Lei, China Automotive Engineering, Research Institute Co., China Zhong Chen, ETS-Lindgren, USA Sergio A. Pignari, Politecnico di Milano, Italy

ABSTRACT

Traditional EMC measurements were developed based on protecting the licensed spectrum from interference caused mainly by ignition systems. Things have moved a long way from these early sources and with the proliferation of digital control systems and electric drives, there are many more on board noise sources and even more potential vulnerabilities. Modern vehicles are now fitted with an increasing number of advanced driver assistance systems (ADAS) many of which rely on external sensors. The EMC of these systems is vital in ensuring that safety is not compromised. This tutorial will review some of the automotive test and measurement trends that are developing to address this emerging need. The tutorial concludes with a presentation on the NEW XJTU-POLIMI Joint School of Design and Innovation Centre in the Western China Science and Technology Innovation Harbor. Located in Xi'an, China, this Centre is a joint project between the Politecnico di Milano and Xi'an Jiaotong University involving national and international automotive companies.

BIOGRAPHIES OF ORGANIZERS



Janet O'Neil is a customer relations specialist with ETS-Lindgren, located in Southern California. She has over 30 years of experience in the RF Microwave and Electromagnetic Compatibility (EMC) industries. She is a member of the Board of Directors of the IEEE Electromagnetic Compatibility (EMC) Society. She is also a member of Subcommittee 1 (Techniques and Development) of ANSI ASC C63® and vice-chair of the 2018 IEEE Symposium on EMC and Signal/Power Integrity to be held in Long Beach, California, July 30 - August 03. Janet was chair of the 2007 IEEE International Symposium on EMC in Honolulu, Hawaii; vice-chair of the 2011 IEEE International Symposium on EMC in Long Beach, California; Publications Chair for the IEEE International Microwave Symposium (IMS) 2013 in Seattle, Washington; and Industry Liaison for the 2017 IEEE Antennas and Propagation (APS/URSI) Symposium. In 2004, she received the Honorary Member Award from the IEEE EMC Society. Her education includes BA degrees in English and in Business Economics from the University of California, Santa Barbara. She may be reached at janet.oneil@ets-lindgren.com.

Simulation of Bulk Current Injection Test Setups involving Complex Cable Harnesses

Flavia Grassi, Politecnico di Milano, Milan, Italy

Meeting the Need for Full Vehicle Enhanced EMC and Antenna Measurements

Garth D'Abreu, ETS-Lindgren, Cedar Park, Texas, USA

Vehicle-level Antenna Performance Analysis and Test in Intelligent Connected Vehicles

Jianmei Lei, China Automotive Engineering Research Institute Co., LTD/ EMC Test Department, China

Common RF Absorbers Evaluations in the W Band (75-110 GHz)

Zhong Chen, ETS-Lindgren, Cedar Park, Texas, USA

The XJTU-POLIMI Joint School of Design and Innovation Centre in the Western China Science and Technology Innovation Harbor

Sergio A. Pignari, Politecnico di Milano, Milan, Italy



TUTORIAL TT-05	Advances in Antenna Calibration and Measurements for EMC Applications
TIME	01:30pm – 06:00pm, Monday, 14 May
VENUE	Room 335
ORGANIZERS	Zhong Chen, ETS-Lindgren, USA Takehiro Morioka, National Institute of Advanced Industrial Science and Technology (AIST), Japan
SPEAKERS	Donglin Meng, National Institute of Metrology, China Carlo F. M. Carobbi, Department of Information Engineering, University of Florence, Italy Zhong Chen, ETS-Lindgren, USA David Knight, NPL, Middlesex, UK Takehiro Morioka, National Institute of Advanced Industrial Science and Technology (AIST), Japan

ABSTRACT

Antennas are used in diverse environments for radiated EMC measurements. Accurate antenna calibration and characterization have a direct impact on the uncertainties of radiated measurements. During calibrations, the antenna test environment can be well controlled, but it may not be representative for the end use case. It is important to understand how the test environments interact with the antennas, and how the overall measurement uncertainties are affected. One of the goals of the tutorial is to address antenna measurements in these diverse and sometimes complicated test environments. Advances in latest research and standards development in antenna measurements are presented.

BIOGRAPHIES OF ORGANIZERS



Zhong Chen is the Director of RF Engineering at ETS-Lindgren, located in Cedar Park, Texas. He has over 20 years of experience in RF testing, anechoic chamber design, as well as EMC antenna and field probe design and measurements. He is an active member of the ANSI ASC C63® committee and Chairman of Subcommittee 1 which is responsible for the antenna calibration and chamber/test site validation standards. He is chairman of the IEEE Standard 1309 committee responsible for developing calibration standards for field probes, and chairman of the IEEE Standard 1128 committee for absorber measurements. His research interests include measurement uncertainty, time domain

measurements for site validation and antenna calibration, development of novel RF absorber materials, and anechoic chamber designs. Zhong Chen received his M.S.E.E. degree in electromagnetics from the Ohio State University at Columbus. He may be reached at zhong.chen@ets-lindgren.com.



Takehiro Morioka received the Ph.D. degree in electrical engineering from the University of Tsukuba, Tsukuba, Japan, in 1998. He has been with the National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba since 1998 and is a Chief Senior Researcher in Electromagnetic Fields Standards Group, National Metrology Institute of Japan (NMIJ) in AIST.

Dr. Morioka's current research includes precision electromagnetic fields measurement and related areas. He investigated the calibration methodology of the dipole antenna and performed the uncertainty analysis. The calibration capability of the dipole antenna was authorized by the intercomparison among the National Metrology Institutes. In addition to the dipole antenna measurement, he is investigating the E-field characterization technique both in free space and TEM waveguides for the field probe calibration. The numerical approach to improve the accuracy of the E-field measurement has been one of his major interests.

The Validation of Calculable Antennas and Their Application in Evaluating the Uncertainty Sources in EMC

Donglin Meng, National Institute of Metrology, Beijing, China

E-field Measurements below 30 MHz in Military and Automotive EMC Testing

Carlo F. M. Carobbi, Department of Information Engineering, University of Florence, Italy

Time Domain Techniques to Remove Close-by Objects for Antenna Calibrations

Zhong Chen, ETS-Lindgren, Cedar Park, TX, USA

Requirements for Antenna Calibration and Introduction to Methods in CISPR 16-1-6 for Frequencies below 1 GHz

David Knight, NPL, Middlesex, England, UK

High-Precision Electric Field Measurement and Uncertainty

Takehiro Morioka, National Institute of Advanced Industrial Science and Technology (AIST), Japan



TUTORIAL TT-06	Using Reverberation Chambers for EM Experiments and EMI Testing
TIME	08:30am-12:30pm, Monday, 14 May
VENUE	Room 336
ORGANIZERS	Wee Jin Koh, Defense Science and Technology Organization, Singapore Mathias Magdowski, Otto von Guericke University Magdeburg, Germany Frank Leferink, THALES / University of Twente, Netherlands
SPEAKERS	Frank Leferink, THALES / University of Twente, Netherlands Mathias Magdowski, Otto von Guericke University Magdeburg, Germany Aizan Ubin, University of Johor, Malaysia Robert Vogt-Ardatjew, University of Twente, Netherlands Wee Jin Koh, Defense Science and Technology Organization, Singapore Vignesh Rajamani, Exponent, USA

ABSTRACT

The focus of this workshop is on the use of reverberation chambers and their advantages for EMI testing. The workshop will start with the general setup and several examples of such chambers, some short theoretical foundations and deal with the properties as well as statistics of the electromagnetic field. The typical validation according to the IEC standard and the corresponding basic measurement procedures for immunity and emission will also be explained. The workshop will close with advanced topics as the measurement of shielding efficiency in reverberation chambers and the comparison and conversion of limits with respect to other test facilities.

BIOGRAPHIES OF ORGANIZERS



Wee Jin Koh received his B. Sc degree in EEE from University of Manchester Institute of Science and Technology, Manchester, UK in 1979, M. Sc degree in EE from Naval Postgraduate School, Monterey, California, USA in 1987, and Ph. D. degree from Ohio State University, Columbus, Ohio, USA in 1995. He has been working DSO National Laboratories since 1981 and is currently the Distinguished Member of Technical Staff specializing in Electromagnetics. He is the co-director of Electromagnetic Effect Research Laboratory and Adjunct Associate Professor in Nanyang Technological University since 2007 and 2004 respectively. His current research interests are lightning protection, signal/power integrity and reverberation chamber.



Mathias Magdowski was born in Wolmirstedt, Germany in 1984. He received his Dipl.-Ing. and Dr.-Ing. degree in electrical engineering from the Otto-von-Guericke University, Magdeburg, Germany in 2008 and 2012, respectively, where he is currently working as a scientific co-worker at the Institute for Medical Engineering. His current research interests include statistical and analytical methods for modeling EMC problems.



Frank Leferink (M'91–SM'08) received the B.Sc., M.Sc., and Ph.D. degrees in electrical engineering from the University of Twente, Enschede, The Netherlands, in 1984, 1992, 2001, respectively. He has been with THALES in Hengelo, The Netherlands since 1984 and is now the Technical Authority EMC. He is also manager of the Network of Excellence on EMC of the THALES Group, with over 100 EMC engineers scattered over more than 20 units, worldwide. In 2003 he was appointed as (part-time, full research) professor, Chair for EMC at the University of Twente. At the University of Twente he lectures the courses Transmission Media, and EMC, and manages several research projects, with 2

researchers and 6 PhD student-researchers. Over 200 papers have been published at international conferences or peer reviewed journals, and he holds 5 patents.

Prof. Leferink is past-president of the Dutch EMC-ESD association, Chair of the IEEE EMC Benelux Chapter, member of ISC EMC Europe, Chairman of EMC Europe 2018 (Amsterdam), member of the Board of Directors of the IEEE EMC Society, and associate editor of the IEEE Transactions on Electromagnetic Compatibility and the IEEE Journal on Electromagnetic Compatibility Practice and Applications (JEMCPA).

Introduction and Fundamental of Reverberation Chamber

Frank Leferink, THALES / University of Twente, Netherlands

Using Reverberation Chambers for EM Experiments and EMI Testing

Mathias Magdowski, Otto von Guericke University Magdeburg, Germany

Stirrer Design for Reverberation Chamber

Aizan Ubin, University of Johor, Malaysia

Shielding Effectiveness Measurement

Robert Vogt-Ardatjew, University of Twente, Netherlands

Pulsed Signal Testing in Reverberation Chamber

Wee Jin Koh, Defense Science and Technology Organisation, Singapore

Time Domain Measurement of the Quality Factor of a Reverberation Chamber

Vignesh Rajamani, Exponent, USA



Workshops

WORKSHOP WS-01	EMC in Railway Systems
TIME	8:30am – 12:30pm, Monday, 14 May
VENUE	Room 331
ORGANIZERS	Peter Sai Wing Leung, City University of Hong Kong, China Kai Sang Lock, Singapore Institute of Technology, Singapore Sergio A. Pignari, Politecnico di Torino, Italy
SPEAKERS	Peter Sai Wing Leung, City University of Hong Kong, China Mark Tin Kin Ho, MTRC, Hong Kong, China Patrick Wong, EMCCL Hong Kong, China Yinghong Wen, Beijing Jiaotong University, China Sergio A. Pignari, Politecnico di Torino, Italy Kai Sang Lock, Singapore Institute of Technology, Singapore

ABSTRACT

There are non-researchers in the EMC or Railway industries, who would like to gain knowledge in this applied topic in the joint conference. This is a half-day tutorial/workshop with fundamentals together with specific EMC Railways topics, with tutorial notes provided. The tutorial/workshop will supplement the Topical Symposium on EMC in Railway Systems of the conference which is more technical in-depth and research orientated.

BIOGRAPHIES OF ORGANIZERS



Dr. Peter Leung obtained his first degree at the City University, London in 1976, and his doctorate degree in 1981 at the same university. His Ph.D. thesis was in electromagnetic analysis in linear motors in High Speed Ground Transport applications. Dr. Leung joined CHAM Ltd. as a project Engineer in 1981; joined ERA Technology Ltd., as Senior Engineer and was responsible for various applied electromagnetic research projects funded by the UK industry.

He was a Principal Engineer with Hirst Research Centre, GEC in 1984, responsible for leading a project on the development of electromagnetic launchers for armour-piercing applications. In 1985 he joined the Weapons Department of Thorn EMI Electronics Ltd., for the development of the Multi-Launch Rocket System. In 1987, Dr. Leung moved to the USA joining Martin Marietta Aerospace in Orlando, working on the same system for one year. In 1988 Dr. Leung joined the City University of Hong Kong as Senior Lecturer, and at present he is an Associate Professor in the Electronic Engineering Department and a team member of the Applied Electromagnetics Laboratory.

Dr. Leung is actively involved in numerous EMC consultancy projects, in both Hong Kong and overseas, as an EMC expert for Railway Systems. He was a Director of the EMC Consulting Group of the CityU Professional Services Ltd, City University of Hong Kong 2004 -2011.

Dr. Leung acted also as the authorized representative and technical manager of the EMC test facilities of the City University of Hong Kong, from 2000 to 2004. He is an EMC technical assessor for the Hong Kong Laboratory Accreditation Scheme, and a member of the working party on Electrical and Electronic Products, Accreditation Advisory Board, Government of Hong Kong SAR from 2000 till now.

Dr. Leung is also the founding Chairman of EMC Chapter, founding Chairman of Product Safety Engineering Chapter, of IEEE Hong Kong Section, and a Director of EMC Consortium Limited for railway consultancy projects, Hong Kong, as a Concurrent post, from 2015.

Dr. Leung's experience has covered over 100 EMC consultancy projects, including railway and metro systems in Sao Paulo, Doha, Macau, Atlanta, Dubai, Miami, Hong Kong and Singapore, providing expert advice from equipment level to system level since the 1990s, EMC in-situ test logistic planning, and resolutions in addressing EMC system and intersystem issues. Dr. Leung is the author or co-author of over 200 papers in journals, conference proceedings, and in EMC technical briefs and consultancy reports.



Professor Lock has a unique blend of practicing and academic experience acquired through a career equally split between the industry and the academia. He received his B.Sc. (1st Class Honours) in Electrical and Electronics Engineering in 1975 from the University of Strathclyde, UK. He completed his Ph.D. degree at the same university in 1979 researching on the design optimization of electrical machines. He joined the National University of Singapore as a lecturer in 1980 and was the Head of its Power and Machines Division, Department of Electrical Engineering, when he left in 1997 to set up his consulting practice.

After 19 years in consulting practice, he returned to the academia in 2016 as a Professor at Singapore Institute of Technology. Concurrently, he is an Adjunct Professor at Singapore University of Technology and Design (SUTD) since 2013.

He has authored over 200 consultancy reports, mainly in power quality and reliability, lightning and surge protection, EMC, and power system design for mission-critical facility. He has conducted several lightning-related failure investigations for equipment at MRT viaduct and on-board rolling stock.

He is a Past President and Honorary Fellow of the Institution of Engineers, Singapore. He received the Public Service Medal (2015), Singapore for his contribution to the engineering profession in Singapore. He was conferred the Outstanding Power Engineer Award by the IEEE Power Engineering Chapter in 1998. He is a Fellow of Academy of Engineering, Singapore, Senior Fellow of ASEAN Academy of Engineering and Technology and an Honorary Fellow of ASEAN Federation of Engineering Organizations.

He is the co-author of a book "Grounds for Grounding: a Circuit-to-System Handbook" published by IEEE/John Wiley in 2010.



Sergio A. Pignari received the Laurea (M.S.) and Ph.D. degrees in electronic engineering from Politecnico di Torino, Turin, Italy, in 1988 and 1993, respectively.

From 1991 to 1998, he was an Assistant Professor with the Dept. of Electronics, Politecnico di Torino, Turin, Italy. In 1998, he joined Politecnico di Milano, Milan, Italy, where he is currently a Full Professor of Circuit Theory and Electromagnetic Compatibility (EMC) at the Dept. of Electronics, Information, and Bioengineering, and Chair of the B.Sc. and M.Sc. Study Programmes in Electrical Engineering, term 2015-20. He is the author or co-author of more than 200 papers published in international journals and conference proceedings. His

research interests are in the field of EMC and include field-to-wire coupling and crosstalk, conducted immunity and emissions in multi-wire structures, statistical techniques for EMC, and experimental procedures and setups for EMC testing. His research activity is mainly related to Aerospace, Automotive, Energy, and Railway industry sectors.

Dr. Pignari is a Fellow of the IEEE. He is a recipient of the 2005 and 2016 IEEE EMC Society Transactions Prize Paper Award, and a 2011 IEEE EMC Society Technical Achievement Award. He is currently serving as an Associate Editor of the IEEE Transactions on Electromagnetic Compatibility. From 2010 to 2015 he served as the IEEE EMC Society Chapter Coordinator. From 2007 to 2009 he was the Chair of the IEEE Italy Section EMC Society Chapter. He has been Technical Program Chair of the ESA Workshop on Aerospace EMC in 2009, 2012, and 2016, Technical Program Chair of EMC' Beijing in 2017, and a Member of the Technical Program Committee of the Asia Pacific EMC Week since 2010. He is currently serving as the Italian URSI Officer for Commission E (Electromagnetic Noise and Interference), term 2015-18.

Introduction to EMC and to Railway Systems

Peter Sai Wing Leung, City University of Hong Kong, China

Principle of Signalling Systems

Mark Tin Kin Ho, MTR Academy, Hong Kong, China

EMC Equipment Compliance and Laboratory Tests

Patrick Wong, EMCCL Hong Kong, China

Lightning Electromagnetic Protection

Kai Sang Lock, Singapore Institute of Technology, Singapore

Aspects of Low-Frequency Conducted and Radiated Emissions from the Railway Infrastructure

Sergio A. Pignari, Politecnico di Milano, Italy

Electromagnetic Compatibility Technology for China High-Speed Railway System*Yinghong Wen, Beijing Jiaotong University, China***EMC Management in Railway Systems***Peter Sai Wing Leung, City University of Hong Kong, China*

WORKSHOP WS-02	Electromagnetic Compatibility for 5G Communications Beyond
TIME	8:30am – 12:30pm, Monday, 14 May
VENUE	Room 332
ORGANIZERS	Er-Ping Li, Zhejiang University, China James L. Drewniak, EMC Laboratory, Missouri S&T, USA Jun Fan, Missouri University of Science and Technology, USA Yihong Qi, General Test Systems, China
SPEAKERS	Er-Ping Li, Zhejiang University, China Yihong Qi, General Test Systems, China Jun Fan, Missouri University of Science and Technology, USA Yaojiang Zhang, Huawei Technologies, China Michael Violette, Washington Laboratories, Ltd., USA

ABSTRACT

With the advancement of mobile communication technology, ultra-high-speed 5G communication technology is going to be deployed. The bandwidth, and data transmission rate are going to be much higher, but the size is going to be smaller, which introduces a great challenge in electromagnetic interference, signal integrity and power integrity. In particular, the spectrum in the range of 28.5 GHz is most likely to become the working frequency band of 5G communication. The electromagnetic interference and shielding becomes a key issue in the system and antenna design. This workshop will address the electromagnetic challenges, and possible solutions. Specially, the presentations will touch on the development in design, simulation, and measurements for novel techniques in 5G communication.

BIOGRAPHIES OF ORGANIZERS

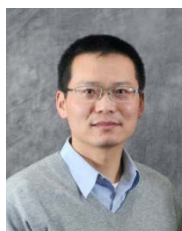
Er-Ping Li is a Changjiang Chair Professor in Zhejiang University, Dean of ZJU-UIUC Institute (Zhejiang University- University of Illinois at Urbana-Champaign), IEEE Fellow, He authored or co-authored over 400 papers published in the referred international journals and conferences, authored two books published by John-Wiley-IEEE Press and Cambridge University Press, received numerous international awards.

His current research interests include electromagnetic compatibility, signal integrity, 3D integrated circuits and modern communication antenna and systems.



James L. Drewniak, Fellow of IEEE, received B.S., M.S., and Ph.D. degrees in electrical engineering from the University of Illinois at Urbana-Champaign. He is currently professor with the Electromagnetic Compatibility Laboratory at Missouri S&T, in the Department of Electrical and Computer Engineering.

His research is in electromagnetic compatibility, signal and power integrity, and electronic packaging.



Jun Fan (S'97-M'00-SM'06-F'16) received his B.S. and M.S. degrees in Electrical Engineering from Tsinghua University, Beijing, China, in 1994 and 1997, respectively. He received his Ph.D. degree in Electrical Engineering from the University of Missouri-Rolla in 2000. From 2000 to 2007, he worked for NCR Corporation, San Diego, CA, as a Consultant Engineer. In July 2007, he joined the Missouri University of Science and Technology (formerly University of Missouri-Rolla), and is currently a Professor and Director of the Missouri S&T EMC Laboratory. Dr. Fan also serves as the Director of the National Science Foundation (NSF) Industry/University Cooperative Research Center (I/UCRC) for Electromagnetic Compatibility and Senior Investigator of Missouri S&T

Material Research Center. His research interests include signal integrity and EMI designs in high-speed digital systems, dc power-bus modeling, intra-system EMI and RF interference, PCB noise reduction, differential signaling, and cable/connector designs. In the IEEE EMC Society, Dr. Fan served as the Chair

of the TC-9 Computational Electromagnetics Committee from 2006 to 2008, the Chair of the Technical Advisory Committee from 2014 to 2016, and a Distinguished Lecturer in 2007 and 2008. He currently is an associate editor for the IEEE Transactions on Electromagnetic Compatibility and IEEE EMC Magazine. Dr. Fan received an IEEE EMC Society Technical Achievement Award in August 2009.



Yihong Qi (M'92–SM'11) received a B.S. degree in Electronics from the National University of Defense Technologies, Changsha, China in 1982, a M.S. degree in Electronics from the Chinese Academy of Space Technology, Beijing, China in 1985, and a Ph.D. degree in Electronics from Xidian University, Xi'an, China in 1989 respectively.

From 1989 to 1993, he was a Postdoctoral Fellow and then an Associate Professor with the Southeast University, Nanjing, China. From 1993 to 1995, he was a Postdoctoral Researcher at McMaster University, Hamilton, ON, Canada. From 1995 to 2010, he was with Research in Motion (Blackberry), Waterloo, ON, where he was the Director of Advanced Electromagnetic Research. Currently, he is the President and Chief Scientist with General Test Systems, Inc., Shenzhen, China; he founded DBJay in 2011, and he is the CTO of ENICE. He is also an Adjunct Professor in the EMC Laboratory, Missouri University of Science and Technology, Rolla, MO and an Adjunct Professor in Hunan University, Changsha, China. He is an inventor of more than 250 published and pending patents. The patent that of multi-resonance antenna has been used by more than 1.4 billion smart phones annually. The O-ring connector invention is shipping more than 4 billion pieces per year. Dr. Qi was a Distinguished Lecturer of IEEE EMC Society for 2014 and 2015, and serves as the Chairman of the IEEE EMC TC-12 and he is a member of advisory board in IEEE Transaction on Electromagnetic Compatibility. He received 2017 technology achievement award from IEEE EMC society.

Electromagnetic Compatibility in 5th Generation Communications

Er-Ping Li, Zhejiang University, China

Diagnostic OTA Measurement for Phased Array

Yihong Qi, General Test Systems, China

Desense Evaluation and Debugging Using Radiated Two-Stage Method in MIMO Testing

Jun Fan, Missouri University of Science and Technology, USA

System EMC in 5G Communication

Yaojiang Zhang, Huawei Technologies, China

The IEEE IoT and 5G Initiatives

Michael Violette, Washington Laboratories, Ltd., USA



WORKSHOP WS-03	EMC & EMF Safety Aspects of Wireless Power Transfer Technologies in Transportation Systems
TIME	01:30pm – 06:00pm, Monday, 14 May
VENUE	Room 331
ORGANIZERS	Mauro Feliziani, University of L'Aquila, Italy Francesca Maradei, Sapienza University of Roma, Italy Tommaso Campi, University of L'Aquila, Italy
SPEAKERS	Francesca Maradei, Sapienza University of Roma, Italy Seungyoung Ahn, Korea Advanced Institute of Science and Technology, Korea Lionel Pichon, University of Paris-Sud, France Sang-Wook Park, Korea Automotive Technology Institute, Korea Mauro Feliziani, University of L'Aquila, Italy Teruo Onishi, NTT DOCOMO Inc., Japan Niels Kuster, IT'IS Foundation, Switzerland

ABSTRACT

The goal of this workshop is to analyze the EMC and EMF safety aspects on electric vehicles (EVs) equipped with wireless power transfer (WPT) systems. These systems based on inductive coupling are very

useful because they allow a safe and comfortable charging procedure of the batteries in EVs. However, the WPT systems are intentional sources of time varying magnetic field and the field levels can be very high due to the relevant power required by the charging process. One of the main concerns is the compliance of the emitted magnetic fields with the EMC and EMF safety standards and regulations. In the workshop the magnetic field generated by automotive WPT systems will be characterized. Then, mitigation techniques based on shielding and innovative compensation circuits will be presented. The impact of the magnetic field on EV passengers or pedestrians will be examined by a numerical dosimetric analysis using sophisticated human body models. Finally, an overview on standardization and compliance testing methods for assessment of wireless power transfer related to human exposure will be given.

BIOGRAPHIES OF ORGANIZERS



Mauro Feliziani (M'91-SM'00) received the degree in electrical engineering from Sapienza University of Rome, Italy, in 1983. He was with the Sapienza as a Researcher (1987-1992), and Associate Professor (1992-1994). He joined the University of L'Aquila, Italy, as Full Professor of Electrical Engineering in 1994. He is the author or coauthor of more than 150 papers published in the fields of electromagnetic compatibility (EMC) and in electromagnetic field numerical computation. His current research interests include numerical modelling, wireless power transfer, wireless communications and bioelectromagnetics. Prof. Feliziani received the Best Paper Award of the IEEE

TRANSACTIONS ON INDUSTRY APPLICATIONS in 1995, and the EMC Europe Symposium, in 2000. From 1995 to 2000, he was Associate Editor of the IEEE TRANSACTIONS ON ELECTROMAGNETIC COMPATIBILITY. In March 2003, he was the Guest Editor of a special issue of the IEEE TRANSACTIONS ON MAGNETICS. In 1994, he was co-founder of the EMC Europe Symposium. He was the General Chairman of the EMC Europe Symposium, Sorrento, Italy, in 2002, and of the EMC Europe Workshop, Rome, in 2005. He was Technical Program Committee Chair of EMC Europe 2012, Rome, Italy. He was the Chair of the International Steering Committee of the EMC Europe Symposium 2012–2015.



Francesca Maradei (M'96, SM'06) received the Laurea degree in electrical engineering (cum laude) from Sapienza University of Rome in 1992, the Diplome d'Etudes Approfondies (DEA) in electrical engineering from the INPG, Laboratoire d'Electrotechnique de Grenoble, France, in 1993, and the Ph.D. degree in Electrical Engineering from the Sapienza University of Rome, Italy, in 1997. She joined the Department of Electrical Engineering at the Sapienza University in 1996 where she is currently full professor. She has authored more than 150 technical papers in the field of computational electromagnetics and EMC. Prof. Maradei received the 2015 Laurence

Cumming Award for outstanding service to the EMC society. She also received the James Melcher Price Paper Award for the paper "Analysis of upset and failures due to ESD by the FDTD-INBCs method," the Oral Presentation Best Paper Award at the International Symposium on Electromagnetic Compatibility—EMC ROMA 1994, Rome, Italy, and the Poster Presentation Best Paper Award at the EMC EUROPE 2000, Brugge, Belgium. She was the President of the IEEE Electromagnetic Compatibility Society from 2010 to 2011, and an Associate Editor of the IEEE TRANSACTIONS ON ELECTROMAGNETIC COMPATIBILITY from 1999 to 2000.



Tommaso Campi received the Laurea Degree in Electronic engineering from Sapienza University of Rome Italy, in 2012, the Master Laurea Degree in Telecommunication Engineering from the University of L'Aquila, Italy, in 2014, the Ph.D. Degree in Electrical Engineering at the University of L'Aquila, Italy, in 2017. He is currently a post-doctoral researcher at the University of L'Aquila.

His research interests include wireless power transfer, biomedical devices and electromagnetic compatibility. He was the recipient of the Best Poster Presentation at the IEEE CEFC 2014, Annecy, France.

Magnetic Field Characterization and Mitigation in an EV Equipped with a WPT System

Silvano Cruciani, University of L'Aquila, L'Aquila, Italy
Francesca Maradei, Sapienza University of Roma, Roma, Italy
Tommaso Campi, University of L'Aquila, L'Aquila, Italy

Electromagnetic Shielding Technology for Wireless Charging Electric Vehicle

Jaehyoung Park, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea
Jedok Kim, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea
Seungyoung Ahn, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea

Assessment of Human Exposure from Wireless Power Transfer Systems in Automotive Applications

Lionel Pichon, University of Paris-Sud, France

Vincenzo Cirimele, Politecnico di Torino, Italy

Fabio Freschi, Politecnico di Torino, Italy

EMF Evaluation of 6.6 kW Wireless Charging System for Electric Vehicles

Sang-Wook Park, Korea Automotive Technology Institute, Korea

Human Exposure in an Electric Vehicle Equipped with a WPT System

Mauro Feliziani, University of L'Aquila, Sapienza University of Rome, Italy

T. Campi, University of L'Aquila, Sapienza University of Rome, Italy

S. Cruciani, University of L'Aquila, Sapienza University of Rome, Italy

V. De Santis, University of L'Aquila, Sapienza University of Rome, Italy

F. Maradei, University of L'Aquila, Sapienza University of Rome, Italy

Recent Standardization Activities of Methods for Assessment of Wireless Power Transfer Related to Human Exposure

Teruo Onishi, NTT DOCOMO Inc., Japan

Kanako Wake, National Institute of Information and Communications Technology, Japan

Traceable Assessment of the Basic Restrictions by Measurement in the Very Close Near-field of Wireless Power Transfer Systems (3kHz to 10MHz)

Ilaria Liorni, IT'IS Foundation, Zurich, Switzerland

Eugene Pikulin, IT'IS Foundation, Zurich, Switzerland

Sven Kuehn, IT'IS Foundation, Zurich, Switzerland

Myles Capstick, IT'IS Foundation, Zurich, Switzerland

Niels Kuster, IT'IS Foundation, Zurich, Switzerland



WORKSHOP WS-04	Lightning Protection of Wind Turbines
TIME	01:30pm – 06:00pm, Monday, 14 May
VENUE	Room 334
ORGANIZERS	Marcos Rubinstein, University of Applied Sciences Western Switzerland, Switzerland Farhad Rachidi, Swiss Federal Institute of Technology, Switzerland
SPEAKERS	Farhad Rachidi, Swiss Federal Institute of Technology, Switzerland Marcos Rubinstein, University of Applied Sciences Western Switzerland, Switzerland Søren Madsen, Global Lightning Protection Services A/S, Denmark Takatoshi Shindo, Central Research Institute of Electric Power Industry, Japan Kazuo Yamamoto, Chubu University, Japan

ABSTRACT

Lightning protection and modelling of modern wind turbines exhibit a number of new challenges due to the large size of the blades, the use of carbon-reinforced plastics (CRP) in them, the current reflections at the top, the bottom and at different junctions along the structure, and the growing number of new installations worldwide. In addition, risk assessment estimates are based essentially on downward flashes, even though upward lightning represents a considerable fraction of the flashes to wind turbines. This workshop presents the current knowledge and challenges related to lightning protection of modern wind turbines.

BIOGRAPHIES OF ORGANIZERS

Marcos Rubinstein (M'84–SM'11–F'14) received the Master's and Ph.D. degrees in electrical engineering from the University of Florida, Gainesville, FL, USA, in 1986 and 1991, respectively. In 1992, he joined the Swiss Federal Institute of Technology, Lausanne, Switzerland, where he was involved in the fields of electromagnetic compatibility and lightning. In 1995, he was with Swisscom, where he worked in numerical electromagnetics and EMC. In 2001, he moved to the University of Applied Sciences of Western Switzerland HES-SO, Yverdon-les-Bains, where he is currently a full Professor, head of the advanced Communication Technologies Group and a member of the IICT Institute Team. He is the author or coauthor of more than 200 scientific publications in reviewed journals and international conferences. He is also the coauthor of seven book chapters. He is the Chairman of the International Project on Electromagnetic Radiation from Lightning to Tall structures, served as the Editor-in-Chief of the Open Atmospheric Science Journal, and currently serves as an Associate Editor of the IEEE Transactions on Electromagnetic Compatibility.

Prof. Rubinstein received the best Master's Thesis award from the University of Florida. He received the IEEE achievement award and he is a co-recipient of the NASA's Recognition for Innovative Technological Work award. He is a Fellow of the IEEE and of the SUMMA Foundation, a member of the Swiss Academy of Sciences and of the International Union of Radio Science.



Farhad Rachidi (M'93–SM'02–F'10) received the M.S. degree in electrical engineering and the Ph.D. degree from the Swiss Federal Institute of Technology, Lausanne, Switzerland, in 1986 and 1991, respectively. He was with the Power Systems Laboratory, Swiss Federal Institute of Technology, until 1996. In 1997, he joined the Lightning Research Laboratory, University of Toronto, Toronto, ON, Canada. From 1998 to 1999, he was with Montena EMC, Rossens, Switzerland. He is currently a Titular Professor and the Head of the EMC Laboratory with the Swiss Federal Institute of Technology, Lausanne, Switzerland. He has authored or co-authored over 170 scientific papers published in peer-reviewed journals and over 350 papers presented at international conferences.

Dr. Rachidi is currently a member of the Advisory Board of the IEEE TRANSACTIONS ON ELECTROMAGNETIC COMPATIBILITY and the President of the Swiss National Committee of the International Union of Radio Science. He has received numerous awards including the 2005 IEEE EMC Technical Achievement Award, the 2005 CIGRE Technical Committee Award, the 2006 Blondel Medal from the French Association of Electrical Engineering, Electronics, Information Technology and Communication (SEE), the 2016 Berger Award from the International Conference on Lightning Protection, the 2016 Best Paper Award of the IEEE Transactions on EMC, and the 2017 Motohisa Kanda Award for the most cited paper of the IEEE Transactions on EMC. In 2014, he was conferred the title of Honorary Professor of the Xi'an Jiaotong University in China. He served as the Vice-Chair of the European COST Action on the Physics of Lightning Flash and its Effects from 2005 to 2009, the Chairman of the 2008 European Electromagnetics International Symposium, the President of the International Conference on Lightning Protection from 2008 to 2014, the Editor-in-Chief of the Open Atmospheric Science Journal (2010-2012) and the Editor-in-Chief of the IEEE TRANS. ON ELECTROMAGNETIC COMPATIBILITY from 2013 to 2015.

Cloud-To-Ground Lightning and Wind Turbines

Farhad Rachidi, University of Applied Sciences Western Switzerland, Switzerland

Marcos Rubinstein, University of Applied Sciences Western Switzerland, Switzerland

Challenges of Lightning Protection of Modern Wind Turbines

Marcos Rubinstein, Swiss Federal Institute of Technology, Switzerland

Farhad Rachidi, Swiss Federal Institute of Technology, Switzerland

Lightning Protection of Modern Wind Turbines – Wind Turbine Blades

Søren Madsen, Global Lightning Protection Services A/S, Denmark

Lightning Protection of Modern Wind Turbines – Wind Turbines (Nacelles)

Søren Madsen, Global Lightning Protection Services A/S, Denmark

Lightning Observations at Wind Turbine Parks in Japan

Takatoshi Shindo, Central Research Institute of Electric Power Industry, Japan

Grounding of Wind Turbines

Kazuo Yamamoto, Chubu University, Japan

WORKSHOP WS-05	CEM for EMC: Computational Electromagnetics (CEM) for EMC Applications
TIME	01:30pm – 06:00pm, Monday, 14 May
VENUE	Room 333
ORGANIZERS	Christian Schuster, Hamburg University of Technology, Germany Lijun Jiang, University of Hong Kong, China Bruce Archambeault, Missouri University of Science and Technology/IBM, USA
SPEAKERS	Cheng Yang, Southeast University, China Dries Vande Ginste, Ghent University, Belgium Hideki Asai, Shizuoka University & SESAME Technology Inc, Japan Bruce Archambeault, Missouri University of Science and Technology/IBM, USA Lijun Jiang, University of Hong Kong, China Huapeng Zhao, University of Electronic Science and Technology, China Zi-Liang Liu, Temasek Laboratories, National University of Singapore, Singapore Xing-Chang Wei, Zhejiang University, China

ABSTRACT

Facing the increasing complexity in modern electronics from IC chips to entire systems, computer aided simulations are indispensable in every product development stage. From the parametric extraction to full wave diagnosis, computational electromagnetics and its supported tools are playing deterministic roles in safeguarding the signal/power quality and system specifications. Upon the critical roles of CEM in EMC, this workshop is intended to cover the computational electromagnetics algorithm developments, parametric extraction methods, hybrid electromagnetics and circuit simulations, model order reduction, ESD modeling, large-scale computing, and other CEM methods in EMC, EMI, signal integrity and power integrity for optimized electromagnetic designs. The applications could range from IC back end technology development, packaging SI/PI design, PCB optimization, PDN, systematic EMI reduction, cable harness in EV, power grid, etc. This workshop will benefit audiences in EMC/EMI/SI/PI researchers and engineers, EDA solution developers, large-scale electromagnetic analysis, etc.

BIOGRAPHIES OF ORGANIZERS



Christian Schuster (S'98 - M'00 - SM'05) received the Diploma degree in physics from the University of Konstanz, Germany, in 1996, and the Ph. D. degree in electrical engineering from the Swiss Federal Institute of Technology (ETH), Zurich, Switzerland, in 2000. Since 2006 he is full professor and head of the Institute of Electromagnetic Theory at the Hamburg University of Technology (TUHH), Germany. Prior to that he was with the IBM T. J. Watson Research Center, Yorktown Heights, NY, where he was involved in high-speed optoelectronic package and backplane interconnect modeling and signal integrity design for new server generations. His current interests include signal and power integrity of digital systems, multiport measurement and calibration techniques, and development of electromagnetic simulation methods for communication electronics.

Dr. Schuster received IEEE Transactions on EMC Best Paper Awards in 2001 and 2015, IEEE Transactions on CPMT Best Paper Awards in 2012 and 2016, IEC DesignCon Paper Awards in 2005, 2006, 2010 and 2017, three IBM Research Division Awards between 2003 and 2005, and IBM Faculty Awards in 2009 and 2010. He is a member of the German Physical Society (DPG) and several technical program committees of international conferences on signal and power integrity, and electromagnetic compatibility. He was serving as a Distinguished Lecturer for the IEEE EMC Society in the period 2012-2013, as a member of the Board of Directors of the EMC Society in 2015, and is currently chair of the German IEEE EMC Chapter.



Lijun Jiang (S'01-M'04-SM'13) received the B.S. degree in electrical engineering from the Beijing University of Aeronautics and Astronautics in 1993, the M.S. degree from the Tsinghua University in 1996, and Ph. D from the University of Illinois at Urbana-Champaign in 2004. From 1996 to 1999, he was an application engineer with the Hewlett-Packard Company. Since 2004, he has been the postdoctoral researcher, the research staff member, and the senior engineer at IBM T.J. Watson Research Center. Since the end of 2009, he is an Associate Professor with the Department of Electrical and Electronic Engineering at the University of Hong Kong, tenured in 2014. From Sept. 2014, he is also a frequent visiting scholar at the University of California at Los Angeles. Currently he is the Director of

Electromagnetics and Optics Laboratory at EEE, HKU.

Dr. Jiang and his research team have received numerous awards and recognitions from international symposiums and conferences. He is the IEEE Senior Member, the Associate Editor of IEEE Transactions on Antennas and Propagation, the Editor of Progress in Electromagnetics Research, the Associate Guest Editor of the Proceedings of IEEE Special Issue in 2011~2012. He has been serving as General Chair, TPC Chair, Session Organizers, and Session Chairs for many international conferences and symposiums. He has been serving as the reviewer for majority of electromagnetics and microwave related journals.

His research interests focus on electromagnetics, computational electromagnetics, IC signal/power integrity, IC EMC/EMI, antennas, multi-physics modeling, etc.



Dr. Bruce Archambeault is an IEEE Fellow, an IBM Distinguished Engineer Emeritus and an Adjunct Professor at Missouri University of Science and Technology. He received his Ph. D. from the University of New Hampshire in 1997. His doctoral research was in the area of computational electromagnetics applied to real-world EMC problems. He has taught numerous seminars on EMC and Signal Integrity across the USA and the world, including the past 15 years at Oxford University.

Dr. Archambeault has authored or co-authored a number of papers in computational electromagnetics, mostly applied to real-world EMC applications. He currently serves as the President of the EMC Society. He is the author of the book "PCB Design for Real-World EMI Control" and the lead author of the book titled "EMI/EMC Computational Modeling Handbook".

Using the Method of Moments for Computation of Nonlinear Shielding

Cheng Yang, Southeast University, China

Heinz-D. Brüns, Hamburg University of Technology, Germany

Christian Schuster, Hamburg University of Technology, Germany

A Rigorous Full-Wave Computational Modeling Technique for the Signal Integrity Analysis of 3-D Interconnects

Martijn Huynen, Ghent University, Belgium

Daniël De Zutter, Ghent University, Belgium

Dries Vande Ginste, Ghent University, Belgium

Acceleration Techniques for SI/PI/EMI Simulation and the Integrative Framework

Hideki Asai, Shizuoka University & SESAME Technology Inc, Japan

A Physics-based Circuit Approach for Power Integrity in Multi-layered PCBs

Bruce Archambeault, Missouri University of Science and Technology/IBM, USA

Circuit Oriented Electromagnetic Modeling using the PEEC Techniques

Lijun Jiang, University of Hong Kong, China

Albert E. Ruehli, Missouri University of Science and Technology, USA

Giulio Antonini, Università degli Studi dell'Aquila, Italy

Recent Progress in Equivalent Modeling of Electromagnetic Compatibility Problems

Huapeng Zhao, University of Electronic Science and Technology, China

EMC Modeling of Large-Scale Antenna/Platform System with GPU Accelerated Fast MoM-PO Hybrid Technique – Theory, Acceleration, and Application

Zi-Liang Liu, Temasek Laboratories, National University of Singapore, Singapore

Near-Field Scanning based EMI Source Reconstruction Algorithm

Xing-Chang Wei, Zhejiang University, China



WORKSHOP WS-06	(a) EMC for Automotive (b) EMC for Medical Equipment
TIME	4:00pm – 6:00pm, Monday, 14 May
VENUE	Room 336
ORGANIZERS	Hideki Asai, Shizuoka University, Japan Dong Jiang, Huazhong University of Science and Technology, China Junhong Deng, TÜV SÜD PSB Pte Ltd, Singapore
SPEAKERS	Fengchao Xiao, University of Electro-Communications, Japan Hideki Asai, Shizuoka University, Japan Dong Jiang, Huazhong University of Science and Technology, China Junhong Deng, TÜV SÜD PSB Pte Ltd, Singapore

ABSTRACT

Recently, automotive and medical industry is growing up all over the world. Especially, the scope of the technical interests becomes much wider than consumer electronics. In this workshop, the technical issues regarding the electromagnetic interference to automotive and medical equipment are discussed and analyzed. The EMC trends in automotive is also introduced, and the EMC standards for medical equipment is presented.

BIOGRAPHIES OF ORGANIZERS



Hideki Asai received the B.E., M.E., and Ph.D. degrees in electrical engineering from Keio University, Yokohama, Japan, in 1980, 1982, and 1985, respectively. In 1985, he was with the Department of Electrical and Electronics Engineering, Sophia University, Tokyo, Japan. He was an oversea researcher at Carleton University, Ottawa, ON, Canada, and Santa Clara University, Santa Clara, CA (1999–2000). Since 1986, he has been with Shizuoka University (Faculty of Engineering), Hamamatsu, Japan, where he is currently a Professor of the Research Institute of Electronics, involved with VLSI-CAD/CAE including signal/power integrity design & simulation technologies, electrical design automation (EDA), analog circuit design, and neural networks, and has published about 100 articles in peer-reviewed journals and more than 250 conference proceedings, and had a variety of collaborations with major companies, was selected as one of the leading researchers in Shizuoka University (2011-2013, 2014-2016). He is an author of the books, “Exercise Notes of Digital Circuits, CORONA PUBLISHING. CO., LTD., 2001” and “Electronic Circuit Simulation Techniques, SCI TECHS PRESS, 2003.” Dr. Asai is a member of the IEEE Nonlinear Circuits and Systems Technical Committee. He was secretary for the IEEE Circuits and Systems Society Tokyo Chapter (1994–1995), and secretary of the Technical Committee on Nonlinear Problems of the Institute of Electronics, Information and Communication Engineers (IEICE) (1997–1999). He was a chairman of the Technical Committee on Nonlinear Problems of the IEICE (2007–2008) and a chairman of the Technical Committee on System Packaging CAE of JIEP (2007–2009), and was an executive board member of JIEP. He was a general chair of the EDAPS2013 (Electrical Design of Advanced Packaging Systems Symposium 2013, Nara, Japan) and a guest editor of Special Section on Analog Circuit Techniques and Related Topics in the IEICE Trans. on Fundamentals issued in March, 2014.

He was the recipient of the Research Encouragement Awards on the occasion of the Takayanagi anniversary, the 50th anniversary of the founding of the IEICE Tokai branch, and on the occasion of the Saitoh anniversary, in 1988, 1989 and 1993, respectively. Furthermore, he received the Prize for Science and Technology (Research Category) awarded by MEXT (Minister of Education, Culture, Sports, Science and Technology), and Takayanagi anniversary Awards, in 2009, and the best paper award at the APEMC2017, and a fellow of the IEICE.



Dong Jiang (S05'-M12'-SM16') received B.S and M.S degrees in Electrical Engineering from Tsinghua University, Beijing, China, in 2005 and 2007 respectively. He began his PhD study in Center for Power Electronics Systems (CPES) in Virginia Tech in 2007 and was transferred to University of Tennessee with his advisor in 2010. He received his PhD degree in University of Tennessee in Dec. 2011. He was with United Technologies Research Center (UTRC) in Connecticut as a Senior Research Scientist/Engineer from Jan 2012 to July 2015. He has been with Huazhong University of Science and Technology (HUST) in China as a professor since July 2015. Dong Jiang's major

research area is power electronics and motor drives, with more than 60 published IEEE journal and conference papers in this area. He has two best paper awards in IEEE conferences. He is an associate editor of IEEE Transactions on Industry Applications.



Dr. Deng Junhong is the Vice President (Electrical and Electronics) of TÜV SÜD PSB, the Chairman of EMC Service Line Committee and the EMC Senior Product Specialist of TÜV SÜD Product Service. His expertise is mainly in EMC consultancy, EMC design, EMC testing, EMC certification, and laboratory management. Additionally, as a senior member of IEEE, he has been serving in IEEE EMC Singapore Chapter as an executive committee member since 2005, Chairman in 2014 and 2015, Vice Chairman in 2009, 2010, 2012 and 2013. Dr. Deng has also been servicing in the IECEE CB scheme as a member of IECEE CTL EMC Expert Task Force since 2007. Dr. Deng is an iNARTE certified EMC engineer, a member of Singapore National Working Group (WG) on IEC/TC 77 on EMC. Prior to joining TÜV SÜD PSB in 1998, Dr. Deng was a lecturer with East China Jiaotong University in 1987 – 1994 and a senior design engineer with Mitsubishi Electric in 1996-1998. Dr. Deng published around 30 research papers in EMC and power electronics, and gave numbers of paper presentations at International conferences. He also provided EMC consultancy to the industry, gave technical talks in various conferences and seminars on EMC regulations, EMC design, EMC testing techniques, EMC standards, etc. and served in the committees of a few international EMC conferences. Dr. Deng holds a Bachelor degree and a Master degree of Engineering from Beijing Jiaotong University, majoring in Railway Electric Propulsion & Automation, and also graduated from Nanyang Technological University with a Master degree of Engineering and Doctor of Philosophy in the area of EMC research.

Electromagnetic Field Measurements for Analysis of Wave Propagation around Automobile

Fengchao Xiao, University of Electro-Communications, Japan

Yoshio Kami, University of Electro-Communications, Japan

Advanced SI/PI/EMI Simulation Technology for Electrical Optimization in Automotive Design: Consideration to 1-D from 3-D

Hideki Asai, Shizuoka University, Japan

EMI Issues and Mitigation for Power Electronics Converter – Approach through PWM

Dong Jiang, Huazhong University of Science and Technology, China

EMC for Medical Equipment

Junhong Deng, TÜV SÜD PSB Pte Ltd, Singapore



WORKSHOP WS-07	Use of FFT-based measuring instruments in EMI testing
TIME	01:30pm-03:30pm, Monday, 14 May
VENUE	Room 336
ORGANIZERS	Jens Medler, Rohde & Schwarz GmbH & Co. KG, Germany Matthias Keller, Rohde & Schwarz GmbH & Co. KG, Germany ChunSoong Wong, Rohde & Schwarz Region Headquarters, Singapore
SPEAKERS	Jens Medler, Rohde & Schwarz GmbH & Co. KG, Germany Matthias Keller, Rohde & Schwarz GmbH & Co. KG, Germany ChunSoong Wong, Rohde & Schwarz Region Headquarters, Singapore

ABSTRACT

Facing the booming converged devices and the fast growing wireless technologies, the complexity of electromagnetic interference and related research become serious topic to the industry. This goes along with a high demand for reducing test time and to comprehensively record the disturbance characteristic of the equipment under test. Usage of FFT-based measuring instruments is the key for addressing these topics. The workshop will address the applicability of FFT-based receivers for EMI compliance measurements against international standards, gives an inside view on the technology of such receivers and will conclude with a practical use cases.

BIOGRAPHIES OF ORGANIZERS



Jens Medler joined Rohde & Schwarz, Munich, Germany, a company specialising in test equipment and radio equipment in 1996. He is responsible for the standardization and application support of EMI test receivers and accessories for both hardware and software and is active member of various CISPR Subcommittees since 1999.

This includes CIS/A on EMC measurement instrumentation and methods, CIS/D on equipment on vehicles and internal combustion engine powered devices and CIS/I on information technology equipment, multimedia equipment and receivers. Since October 2017 he is acting as Convenor of CIS/A WG2; the CISPR Working Group on EMC measurement methods, statistical techniques and uncertainty. He is recipient of the IEC 1906 Award.



Matthias Keller joined the test and measurement division of Rohde & Schwarz, Munich, Germany in 1985. He worked in the development department for EMI test receivers, EMI test software and real time spectrum analyzers and was project manager for these products. Now he is product manager for EMI test receivers and EMI test software. Matthias holds several patents for EMI test technology.



Chun Soong is currently the Oscilloscope Product Manager in Asia. He was previously Regional Application Engineer specializing in oscilloscopes since 2010. His main focus in Rohde & Schwarz is to drive product business development and roll out in the region. He is also working on providing training and guidance on oscilloscope applications. Prior to Rohde & Schwarz, Chun Soong was with Intel for 7 years, where he spent his early years in Chipset Electrical Validation, and was subsequently involved in USB, DDR2 & DDR3 measurement methodology definition. Chun Soong eventually progressed to Platform Application where he worked closely with ODM and OEM in motherboard design for Intel chipset launch.

Chun Soong graduated from the University of Sydney with the Bachelor of Engineering (Electrical) degree.

Applicability of FFT-based Measuring Receivers for EMI Compliance Measurements

Jens Medler, Rohde & Schwarz GmbH & Co. KG, Standardization and Application Specialist for EMC Test Equipment, Germany

FFT-based Receiver for EMI Measurements

Matthias Keller, Rohde & Schwarz GmbH & Co. KG, EMC product manager, Germany

EMI Debugging by using Oscilloscope with FFT Functionality

Chun Soong Wong, Rohde & Schwarz Region Headquarters Singapore, Oscilloscope product manager, Singapore



Overview of Technical Program on 15 May (Tuesday)

Color codes:		Special Sessions (SS)	Topical Meetings (TM)	Regular Sessions (TC, SC)	Plenary Talks	Opening Ceremony	Interactive Forum (IF)	Experiment & Demonstration (ED)		
Date	Time	Room #331	Room #332	Room #333	Room #334	Room #335	Room #336	IF & ED Sessions	Exhibition	
15 May (TU)	08:30am 10:10am	AM-I	TC-10: SI/PI (I)	TM-02: EMC in Railway Systems (I)	TC-02: EMC Measurement (I)	TC-09: Computational Electromagnetics (I)	TC-12: EMC for Emerging Wireless Technology (I)	TM-04: EMC in Power Electronics and Smart Grid (I)	Open	
	10:10am 10:30am		Tea Break							
	10:30am 12:30pm	AM-II	Opening Ceremony of 2018 Joint IEEE EMC & APEMC <i>Venue: Summit 2, Level 3</i> <i>Chairs: Er-Ping Li, Symposium President; En-Xiao Liu, Symposium General Chair</i> <u>Plenary Talk I:</u> Chromebooks, USB-C and Google PI/SI Research <i>Mark Hayter, Director, Google, USA</i> <u>Plenary Talk II:</u> Frontiers in Computational Time Reversal for Electromagnetic Synthesis <i>Wolfgang Hoefer, University of Victoria, Canada</i>							
	12:30pm 01:30pm		Lunch							
	01:30pm 03:30pm	PM-I	TC-10: SI/PI (II)	SS-07: Aerospace EMC	SS-10: Techniques & Measures to Manage Risks With Regard to EM Disturbances	TC-09: Computational Electromagnetics (II)	SS-05: Potential Electromagnetic Techniques for Booming Wireless Communications (I)	TC-05: EM Information Leakage		
	03:30pm 04:00pm		Tea Break							
04:00pm 06:00pm	PM-II	TM-01: IC EMC (I)	SS-08: Simulation and testing for Automotive EMC (I)	SS-12: Electromagnetic Shielding Technology for Mobile Devices	TC-04: EMI Control Methods	SS-05: Potential Electromagnetic Techniques for Booming Wireless Communications (II)	TC-05: Lightning and System Protection	3:00pm-5:00pm Interactive forum I E & D Session I		

Technical Sessions – Tuesday, 15 May 2018 (AM-I)

Rooms	Room #331	Room #332	Room #333
08:30am – 10:10am	TC-10: SI/PI (I) Chair(s): Chunfei Ye (Intel, USA) Blaise Ravelo (Normandy Univ. UNIROUEN, France)	TM-02: EMC in Railway Systems (I) Chair(s): Sergio Amedeo Pignari (Politecnico di Milano, Italy) Kai Sang Lock (Singapore Inst. of Technology)	TC-02: EMC Measurements (I) Chair(s): Vignesh Rajamani (Exponent, USA) Yongxin Guo (National Univ. of Singapore)
08:30am	TU-AM-I-TC-10-1 Eye-Diagram Estimation with Stochastic Model for 8B/10B Encoded High-Speed Channel (#8768) Junyong Park, Dong-Hyun Kim, Youngwoo Kim, Sumin Choi, Joungho Kim (Korea Advanced Inst. of Science and Technology)	TU-AM-I-TM-02-1 Research on Electromagnetic Radiation of Xijiang Traction Substation (#8766) Xiaohu Zeng, Hong Ma, Congzhi Pi, Peng Yang (Huazhong Univ. of Science & Technology), Shun Yan, Shaohua Yuan, Jianfeng Shi, Yuming Zhang (China Railway Siyuan Survey and Design Group Co., Ltd), Lin Ma, Shuping Pang (Wuhan RF Spectrum Information Technology Co., Ltd)	TU-AM-I-TC-02-1 Analysis on the Adaptability of the International Radiation Immunity Test Method to Intelligent Connected Vehicle (#8729) Yifu Ding, Guangyu Zhang, Zhiguo Zhang, Xu Zhang, Yue Zhang (China Automotive Technology and Research Center)
08:50am	TU-AM-I-TC-10-2 1:4 Tree Microstrip Interconnect Kron-Branin Model (#8776) ★BEST SI/PI PAPER FINALIST★ Blaise Ravelo (University of Rouen Normandy), Olivier Maurice (Ariane Group)	TU-AM-I-TM-02-2 Practical Considerations of Human Exposure in Railway Systems (#8827) Shinichi Sadamitsu (Mitsubishi Heavy Industries, Ltd, Japan), Peter Sai-Wing Leung (City Univ. of Hong Kong), W. K. LO (EMC Consortium Limited), Weinong Sun (City Univ. of Hong Kong)	TU-AM-I-TC-02-2 Impacts to Measurement Uncertainty of Radiated EMI Measurement by Setting Terminating Condition of AC Mains Cable Leaving from Test Area (#8814) Kunihiko Osabe (VCCI Council), Nobuo Kuwabara (Kyushu Inst. of Technology), Hidenori Muramatsu (VCCI Council)
09:10am	TU-AM-I-TC-10-3 Noise Coupling Analysis for High Speed Differential Trace Crossing Switching Voltage Regulator Area (#8783) Yang Wu, Zhongfu Ji, Jiang Wang, Wenbin Ma (Cisco Systems)	TU-AM-I-TM-02-3 Induced Voltage Study and Measurement for Communication System in Railway (#9892) Yang Li, Chin Hian Leow, Wee Leong Lau (ST Electronics (Info-Comm Systems) Pte Ltd), Meng Chuan Kelvin Ong (Land Transport Authority)	TU-AM-I-TC-02-3 A Lumped Model of the Rod Antenna Measurement Setup for Automotive and Military Testing (#8820) ★BEST EMC PAPER FINALIST★ Carlo Carobbi (Univ. of Florence)
09:30am	TU-AM-I-TC-10-4 Enabling the Next Generation USB 3.1 (Gen 2) in Mobile Devices (#8832) Nitin Srivastava, Antonio Ciccomancini Scogna, Hwanwoo Shim (Samsung Electronics)	TU-AM-I-TM-02-4 Research on stray current distribution of Metro based on Numerical Simulation (#9577) Yanhua Lin (Beijing Jiaotong Univ.), Kumpeng Li (Guangzhou Metro Design&Research Inst. Co. Ltd), Mengmeng Su (Beijing Jiaotong Univ.), Yongchang Meng (Tsinghua Univ.)	TU-AM-I-TC-02-4 Investigation of Leveling Methods in Military Susceptibility Testing (#8963) Soydan Çakir, Osman Şen, Mehmet Çınar, Mustafa Çetintaş (TUBITAK National Metrology Institute)
09:50am	TU-AM-I-TC-10-5 Ceramic Interconnect Bridge for Heterogeneous Multiple Chip Packaging (#9923) Boping Wu (Huawei Technologies)	TU-AM-I-TM-02-5 EMC Environmental Survey of Railway Systems (#10110) Patrick Wong, Tony W K LO (EMC Consortium Limited, Hong Kong), Richard Fung, Kam Chuen Lee (Hong Kong Standards and Testing Centre)	TU-AM-I-TC-02-5 Risk Assessment and Mitigation for the Hazards of Electromagnetic Radiation to Fuel during High Intensity Radiated Field Testing of Aircraft (#9061) Adrian Monk, Timothy Duggan (RF Design, Test and Evaluation Group, QinetiQ)

Technical Sessions – Tuesday, 15 May 2018 (AM-I)

Rooms	Room #334	Room #335	Room #336
08:30am – 10:10am	<p>TC-09: Computational Electromagnetics (I)</p> <p>Chair(s): Francesca Maradei (Sapienza Univ., Italy)</p>	<p>TC-12: EMC for Emerging Wireless Technology (I)</p> <p>Chair(s): Lijun Jiang (Hong Kong Univ., China) Dheena Moongilan (Nokia Bell Labs, USA)</p>	<p>TM-04: EMC in Power Electronics and Smart Grid (I)</p> <p>Chair(s): Henglin Chen (Zhejiang Univ., China) Flavia Grassi (Politecnico di Milano, Italy)</p>
08:30am	<p>TU-AM-I-TC-09-1</p> <p>Broadband Green's Function with Higher Order Extractions for Arbitrary Shaped Waveguide Obeying Neumann Boundary Conditions (#9043)</p> <p>Weilun Kwek (Univ. of Michigan^{#1}), Kung-Hau Ding (Wright-Patterson AFB), Tien-Hao Liao (California Inst. of Technology), Leung Tsang^{#1}</p>	<p>TU-AM-I-TC-12-1</p> <p>3D Coverage Optimization Research on 5G Massive MIMO Antenna Array (#9012)</p> <p>Feng Gao (China Mobile Group Design Inst. Co., Ltd.^{#1}), Runhong Shan (Copyright Protection Center of China), Wenyu Su (China Putian Corporation), Wentao Zhu^{#1}, Kai He^{#1}, Lifang Wang^{#1}</p>	<p>TU-AM-I-TM-04-1</p> <p>A Comprehensive Investigation on Conducted EMI Reduction for Variable Switching Frequency PWM (#8896)</p> <p>Jianan Chen, Dong Jiang, Xuan Zhao (Huazhong Univ. of Science and Technology)</p>
08:50am	<p>TU-AM-I-TC-09-2</p> <p>Inductor Modeling with Huygens's Equivalent Model To Estimate Coupling Noise (#9214)</p> <p>Chenjun Liu, Gezi Zhang, Xuequan Yu (Huawei Technologies Co. Ltd.)</p>	<p>TU-AM-I-TC-12-2</p> <p>Digital-Domain Assisted RF Cancellation of Nonlinear Wideband Self-Interference for Co-site Wireless Communication Systems (#9052)</p> <p>Songhu Ge, Jin Meng, Jinling Xing, Jian Tang, and Chuanjie Gou (Naval Univ. of Engineering)</p>	<p>TU-AM-I-TM-04-2</p> <p>Active Common Mode Cancellation (#9206)</p> <p>Stephan Cordes, Frank Klotz (Infineon Technologies AG)</p>
09:10am	<p>TU-AM-I-TC-09-3</p> <p>Application of the Artificial Material Single Layer (AMSL) Method to Assess the Magnetic Field Generated by a WPT System with Shield (#9274)</p> <p>Silvano Cruciani, Tommaso Campi (Univ. of L'Aquila), Francesca Maradei (Sapienza Univ.), Mauro Feliziani (Univ. of L'Aquila)</p>	<p>TU-AM-I-TC-12-3</p> <p>An Experimental Study of WiFi Performance Impact Due to SSC Spread-Percentage and Modulation Frequency (#9095)</p> <p>★BEST EMC PAPER FINALIST★</p> <p>Kae-An Liu, Jaejin Lee, Hao-Han Hsu, Chung-Hao Chen (Intel Corporation)</p>	<p>TU-AM-I-TM-04-3</p> <p>Design of an Active EMI Filter for Bearing Current Elimination in VFD (#9296)</p> <p>Anagha E R, Nisha P V, Sindhu T K (National Inst. of Technology Calicut)</p>
09:30am	<p>TU-AM-I-TC-09-4</p> <p>Analysis of Field-to-Transmission Line Coupling inside a Reverberation Chamber based on Mode Expansion Method (#9584)</p> <p>Yuan Zhao (Sichuan Univ.^{#1}), Qiang Liu (Inst. of Applied Physics and Computation Mathematics^{#2}), Xiang Zhao, Liping Yan, Changjun^{#1}, Haijing^{#2}, Kama Huang^{#1}</p>	<p>TU-AM-I-TC-12-4</p> <p>Radiated Immunity Field Uniformity Enhancement Techniques for Milli-meter Wave Frequencies (#9231)</p> <p>Dheena Moongilan (Nokia Bell Labs)</p>	<p>TU-AM-I-TM-04-4</p> <p>Analysis of CM EMI Reduction with Zero CM Modulation Scheme Utilizing Paralleled Inverters (#8904)</p> <p>Zewei Shen, Dong Jinag, Yechi Zhang (Huazhong Univ. of Science and Technology)</p>
09:50am	<p>TU-AM-I-TC-09-5</p> <p>Numerical Investigation of Orbital Angular Momentum Density of Antenna Arrays Based on the Method of Moments (#9344)</p> <p>Woocheon Park (Ajou Univ.), Dong Gun Kam (Ajou Univ.), Heinz-D. Brüns (Hamburg Univ. of Technology), Christian Schuster (Hamburg Univ. of Technology)</p>	<p>TU-AM-I-TC-12-5</p> <p>Radio Frequency Interference Estimation Using Transfer Function Based Dipole Moment Model (#9494) ★BEST EMC PAPER FINALIST★</p> <p>Qiaolei Huang, Yuanzhuo Liu, Liang Li, Yansheng Wang, Chunyu Wu, Jun Fan (Missouri Univ. of Science and Technology)</p>	<p>TU-AM-I-TM-04-5</p> <p>A Full Time Domain Methodology based on Near Field Time Reversal for Equivalent Source Identification (#9618)</p> <p>Sassia Hedia (Univ. of Sousse and Univ. of Paris-Sud), Bessem Zitouna (Univ. of Sousse), Jaleddine Ben Hadj Slama (Univ. of Sousse), Lionel Pichon (University of Paris-Sud)</p>

Technical Sessions – Tuesday, 15 May 2018 (PM-I)

Rooms	Room #331	Room #332	Room #333
01:30pm – 03:30pm	TC-10: SI/PI (II) Chair(s): Zhiping Yang (Google, USA) Ram Achar (Carleton Univ., Canada)	SS-07: Aerospace EMC (Supported by SC-07) Chair(s): Robert Scully (NASA, USA) Flavia Grassi (Politecnico di Milano, Italy)	SS-10: Techniques & Measures to Manage Risks with Regard to EM Disturbances Chair(s): Keith Armstrong (Cherry Clough Consultants Ltd, UK) Andy Degraeve (KU Leuven, Belgium)
01:30pm	TU-PM-I-TC-10-1 Floorplanning and Pin Assignment Co-Optimization for 3D Integrated Circuit Using Simulated Annealing (#8998) Quan-Chao Su, Mu-Shui Zhang, Yi-Fei He, Hai-Ying Zhu (Sun Yat-Sen Univ.)	TU-PM-I-SS-07-1 EMC Aspects of Compact Wiring for Future Aircraft (#9673) Jesper Lansink Rotgerink, Harmen Schipper, Jaco Verpoorte (Netherlands Aerospace Centre), Kees Nuyten (Fokker Elmo)	TU-PM-I-SS-10-1 Risk Management of Electromagnetic Disturbances (#10399) Keith Armstrong (Cherry Clough Consultants Ltd), Davy Pissort, Andy Degraeve, Jonas Lannoo (KU Leuven, Bruges Campus)
01:50pm	TU-PM-I-TC-10-2 Estimation and Analysis of Crosstalk Effects in High- Bandwidth Memory Channel (#10422) Sumin Choi (KAIST), Heegon Kim (Missouri Univ. of Science and Technology), Junyong Park, Dong- Hyun Kim, Daniel H. Jung, Jaemin Lim, Kyungjun Cho, Joungho Kim (KAIST)	TU-PM-I-SS-07-2 Development of Spacecraft Radiated Susceptibility RS103 Requirements From Modeling Methods (#10360) Pablo S. Narvaez, Nacer E. Chahat, Edward C. Gonzales (Jet Propulsion Laboratory)	TU-PM-I-SS-10-2 Reducing Functional Safety and Other Risks Due to EM Disturbances: IEEE Standard 1848 (#10398) Keith Armstrong (Cherry Clough Consultants Ltd), Davy Pissort, Andy Degraeve, Jonas Lannoo (KU Leuven, Bruges Campus)
02:10pm	TU-PM-I-TC-10-3 Placement of Decoupling Capacitors on Power Transmission Lines (#9039) Ihsan Erdin (Celestica Inc.), Ram Achar (Carleton Univ.)	TU-PM-I-SS-07-3 FFT-Based Time Domain Solution to Power Frequency Issue of CS101 Testing for Military and Aerospace Equipment (#9902) Soydan Cakir, Mesut Ozturk, Bahadir Tektas, Osman Sen, Savas Acak (TUBITAK UME), Marc Pous (Universitat Politecnica de Catalunya)	TU-PM-I-SS-10-3 EMI Risk Analysis via Dedicated Evaluation of the Susceptibility of Medical Devices (#10321) Wuwus Ardiatna (Indonesian Inst. of Sciences), Dwi Mandaris (Univ. of Twente), Aditia Nur Bakti, Siddiq Wahy Hidayat (Indonesian Inst. of Sciences), Frank Leferink (Univ. of Twente and THALES, Netherlands.)
02:30pm	TU-PM-I-TC-10-4 Extended Unterminated Line (EUL) for Accurate and Efficient Crosstalk Measurement (#9084) Xiaoning Ye, Albert Sutono, Dazhao Liu, Varun Gupta (Intel Corporation)	TU-PM-I-SS-07-4 On the Disruption of Wired Serial Communication Links by Time Domain Interference (#10353) Michael Basford, Christopher Smartt, Stephen Greedy, Dave Thomas (Univ. of Nottingham)	TU-PM-I-SS-10-4 Study on the Use of Different Transmission Line Termination Strategies to Obtain EMI-Diverse Redundant Systems (#10201) Jonas Lannoo, Andy Degraeve, Dries Vanoost, Jeroen Boydens, Davy Pissort (KU Leuven, Bruges Campus)
02:50pm	TU-PM-I-TC-10-5 De-embedding Comparisons of 1X-Thru SFD, 1-Port AFR, and 2X- Thru SFD (#9628) Yuan Chen, Bichen Chen, Jiayi He (Missouri Univ. of Science & Technology#1), Richard Zai (PacketMicro. Inc.), Jun Fan, James Drewniak#1	TU-PM-I-SS-07-5 Advanced Models for the Transfer Impedance of Metal Braids in Cable Harnesses (#9915) Jaco Verpoorte, Harmen Schippers, Jesper Lansink Rotgerink (Netherlands Aerospace Centre)	TU-PM-I-SS-10-5 Effectiveness of Inversion Diversity to Cope with EMI within a Two- Channel Redundant System (#10216) Jonas Lannoo, Andy Degraeve, Dries Vanoost, Jeroen Boydens, Davy Pissort (KU Leuven, Bruges Campus)
03:10pm		TU-PM-I-SS-07-6 Effect of Electron Density in Multipaction on the Electromagnetic Characteristics of Microwave Device (#9877) Xinbo Wang, Wanzhao Cui, Yongdong Li, Xiaoning Zhang, Chunliang Liu (Xi'an Jiaotong University)	TU-PM-I-SS-10-6 Extending the Normal Immunity Tests to Help Prove Functional Safety (#10400) Keith Armstrong (Cherry Clough Consultants Ltd), Bill Radasky (Metatech Corporation)

Technical Sessions – Tuesday, 15 May 2018 (PM-I)

Rooms	Room #334	Room #335	Room #336
01:30pm – 03:30pm	TC-09: Computational Electromagnetics (II) Chair(s): Lijun Jiang (Hong Kong Univ., China) Eng Leong Tan (Nanyang Technological Univ., Singapore)	SS-05: Potential Electromagnetic Techniques for Booming Wireless Communications (I) Chair(s): Hsi-Tseng Chou (National Taiwan Univ.) Ding-Bing Lin (National Taiwan Univ. of Science and Technology)	TC-05: EM Information Leakage Chair(s): Yu-ichi Hayashi (Nara Inst. of Science and Technology, Japan) William Radasky (Metatech Corporation, USA)
01:30pm	TU-PM-I-TC-09-1 Influence of Coupling Coefficient on Transmission and Reflection Zeros of Open-Ended Coupled Ideal Stubs (#8775) <i>Blaise Ravelo (Normandy Univ. UNIROUEN)</i>	TU-PM-I-SS-05-1 Time-Domain Electromagnetic Field Analysis based on Discrete Time Signal Expansion and its Relation to Frequency Domain Banded Signals (#9071) <i>Hsi-Tseng Chou (National Taiwan Univ.)</i>	TU-PM-I-TC-05-1 Fundamental Study on Non-invasive Frequency Injection Attack against RO-based TRNG (#10168) <i>Saki Osuka, Daisuke Fujimoto, Yu-ichi Hayashi (Nara Inst. of Sci. and Techno.), Naofumi Homma (Tohoku Univ.), Arthur Beckers, Josep Balasch, Benedikt Gierlich, Ingrid Verbauwheide (KU Leuven)</i>
01:50pm	TU-PM-I-TC-09-2 Invasive Weed Optimized Planar Elliptical Dipole Antenna for Ultra-Wideband EMC Applications (#9675) ★BEST EMC PAPER FINALIST★ <i>Emmanouil Tziris (Brunel Univ.^{#1}), Pavlos Lazaridis (Univ. of Huddersfield^{#2}), John Cosmas^{#1}, Ian Glover, Keyur Mistry^{#2}, Zaharias D. Zaharis, Thomas Xenos (Aristotle Univ. of Thessaloniki)</i>	TU-PM-I-SS-05-2 Mathematic Subarray Decomposition to Compose the Radiation of Electrically Large Phased Array of Antennas with Limited Excitation Power in Measurement (#9267) <i>Shih-Chung Tuan (Oriental Inst. of Technology), Hsi-Tseng Chou (National Taiwan Univ.), Hao-Ju Huang, Dun-Yuan Cheng (Yuan Ze Univ.)</i>	TU-PM-I-TC-05-2 Study on the Effect of Clock Rise Time on Fault Occurrence under IEMI (#10287) <i>Naoto Saga, Takuya Itoh (Tohoku Univ.), Yu-ichi Hayashi (Nara Inst. of Science and Technology), Takaaki Mizuki, Hideaki Sone (Tohoku Univ.)</i>
02:10pm	TU-PM-I-TC-09-3 Feasibility of Uncertainty Quantification for Power Distribution Network Modeling Using PCE and a Contour Integral Method (#8809) <i>David Dahl, Oemer Faruk Yildiz, Eduard Frick, Christian Seifert, Marko Lindner, Christian Schuster (Hamburg Univ. of Technology)</i>	TU-PM-I-SS-05-3 An Introduction to MIMO Antenna Array Designs for Future 5G Smartphone Applications (#9702) <i>Chow-Yen-Desmond Sim, Chih-Heng Lin, Heng-Yu Liu (Feng Chia Univ.)</i>	TU-PM-I-TC-05-3 Data Injection Attacks Using a Hardware Trojan on a Transmission Line (#10116) <i>Shugo Kaji (Nara Inst. of Science and Techno.), Masahiro Kinugawa (National Inst. of Techno., Sendai College), Daisuke Fujimoto, Yuichi Hayashi (Nara Inst. of Science and Technology)</i>
02:30pm	TU-PM-I-TC-09-4 An Iterative Finite Element Boundary Integral-Physical Optics Method for Analyzing Shielding Effectiveness of a Cavity Above Large Platform (#9544) <i>Yang Liu, Yu-Teng Zheng, Haijing Zhou (Inst. of Applied Physics and Computational Mathematics)</i>	TU-PM-I-SS-05-4 RFI Suppression and Throughput Improvement of WiFi Performance with Graphene Coating for Converging Mobile Device (#8976) <i>Cheng-Hau Wu, Han-Nien Lin, Jing-Wen Fu (Feng Chia Univ.), Jeffrey Lin (National Kaohsiung University), Min-Shang Lin (Bureau of Standards, Metrology and Inspection, MOEA), Chia-Hung Su (Electronic Testing Center)</i>	TU-PM-I-TC-05-4 HT-detection Method Based on Impedance Measurements of ICs (#10162) <i>Shota Nin, Daisuke Fujimoto, Yuichi Hayashi (Nara Inst. of Science and Technology), Noriyuki Miura, Makoto Nagata (Kobe Univ.), Tsutomu Matsumoto (Yokohama National Univ.)</i>
02:50pm	TU-PM-I-TC-09-5 The Calculation of Quantum Radar Scattering Characteristic for the 3D Circular Cone Target (#8761) <i>Chonghua Fang (Science and Technology on Electromagnetic Compatibility Laboratory, China Ship Development and Design Centre)</i>	TU-PM-I-SS-05-5 A New Uniformity-Enhanced Double Ridged Horn Antenna for Radiated Susceptibility Test from 1 GHz to 18 GHz (#9384) <i>Tsung-Ching Lin, Chih-Hung Lee (Electron. Testing Center), Jian-Li Dong (BSMI), Cheng-Nan Chiu (Yuan Ze Univ.), Ding-bing Lin (National Taiwan Univ. of Sci. & Techno.), Hsin-Piao Lin (National Taipei Univ. of Techno.)</i>	TU-PM-I-TC-05-5 EM Security Analysis of Compact ECDSA Hardware (#10089) <i>Kosuke Koiwa (Tohoku Univ.), Daisuke Fujimoto, Yuichi Hayashi (Nara Inst. of Sci. & Techno.), Makoto Nagata (Kobe Univ.), Makoto Ikeda (Univ. of Tokyo), Tsutomu Matsumoto (Yokohama National Univ.), Naofumi Homma (Tohoku Univ.)</i>
03:10pm		TU-PM-I-SS-05-6 E-Band Multi-Layer Full-Corporate-Feed Waveguide Slot Array Antenna (#9341) <i>Derry Permana Yusuf, Hsi-Tseng Chou (National Taiwan Univ.)</i>	TU-PM-I-TC-05-6 A Study on an Evaluation Method for EM Information Leakage Utilizing Controlled Image Displaying (#10363) <i>Ryota Birukawa, Gentaro Tanabe, Yu-ichi Hayashi, Takaaki Mizuki, Hideaki Sone (Tohoku Univ.)</i>

Interactive Forum Sessions – Tuesday Afternoon, 15 May 2018

15 May 2018, Tuesday 3:00-5:00pm
Venue: Foyer (outside Room #331 to #336), Level 3

Chair(s): Hui Min Lee (Inst. of High Performance Computing, Singapore),
Eng Kee Chua (Nanyang Technological Univ., Singapore)

TU-PM-I-FOR-1

Analyzing the Model of Transformer Windings Under Very Fast Transient Overvoltage (#9910)

Shiming Liu (Shandong Univ.), Chuanshun Fu (Shandong Univ.), Ying Zang (Shandong Electric Power Equipment Co., Ltd.), Shunqin Zhang (Shandong Electric Power Equipment Co., Ltd.), Shuai Li (Shandong Univ.), Qiyang Huang (Shandong Univ.), Qingyao Dong (Taian Power Supply Company of Shandong Electric Power Company)

TU-PM-I-FOR-2

Paper-Like FeSiAl/Cellulose Nanofiber Composite (#10281)

Jiagen Jiang, Peiheng Zhou, Wenxin Li, Xiaojia Luo, Wanli Chen, Longjiang Deng, Yang Zhou, Guorui Zhang, Fengxia Li (Univ. of Electronic Science and Technology of China)

TU-PM-I-FOR-3

Experimental Study of the Properties of Metamaterials Using Broadside-Coupled Split Ring Resonators (#9451)

Morimichi Itoh (Osaka Research Inst. of Science and Technology), Shinichiro Yamamoto (Univ. of Hyogo), Kenichi Hatakeyama (Univ. of Hyogo)

TU-PM-I-FOR-4

ESD Housing Effect (#9086)

Huasheng Zhao (Cisco Systems Inc.)

TU-PM-I-FOR-5

Improving Performance of Shipboard HF Communication Antennas by Antenna Placement (#10618)

Can Bayseferogullari, Mustafa Ural (Aselsan Inc.)

TU-PM-I-FOR-6

Amplitude Characteristics of Frequency Band-limited LED Emission for Evaluation of Impact on Wireless Medical Telemeter (#10076)

Sazu Arie (National Inst. of Information and Communications Technology (NICT)), Kai Ishida (National Inst. of Information and Communications Technology (NICT)), Minoru Hirose (Kitasato Univ.)

TU-PM-I-FOR-7

Electromagnetic Compatibility of Industrial Robots Caused by Power Supply Networks (#10100)

Sun Tianfei (Chongqing Dexin Robot Testing Center Co., Ltd)

TU-PM-I-FOR-8

Antenna Diversity Method for Emission Measurements in a Reverberation Chamber (#10113)

Sang il Kwak (Electronics and Telecommunications Research Inst.), Jung-Hwan Hwang (Electronics and Telecommunications Research Inst.), Dong-uk Sim (Electronics and Telecommunications Research Inst.), Jong-Hwa Kwon (Electronics and Telecommunications Research Inst.), Myunghoi Kim (Hankyong National Univ.)

TU-PM-I-FOR-9

Nonlinear Dielectric Behaviour of Semiconductor Material under Microwave Field (#10159)

Yong Gao, En Li, Gaofeng Guo (Univ. of Electronic Science and Technology of China)

TU-PM-I-FOR-10

A Study on Nonlinear Effect of Modulated Radio Signals at 1 kHz on Stimulus Response (#10164)

Hiroki Shinoda, Daisuke Anzai, Jianqing Wang (Nagoya Inst. of Technology)

TU-PM-I-FOR-11

Research on Conducted and Radiated Electromagnetic Interference of VSC-HVDC Transmission System (#10175)

Xiuwu Zhang, Weidong Zhang, Bo Xu, Jian Zhang (North China Electric Power Univ.)

Interactive Forum Sessions – Tuesday Afternoon, 15 May 2018**15 May 2018, Tuesday 3:00-5:00pm****Venue: Foyer (outside Room #331 to #336), Level 3***Chair(s): Hui Min Lee (Inst. of High Performance Computing, Singapore),
Eng Kee Chua (Nanyang Technological Univ., Singapore)***TU-PM-I-FOR-12****Efficient Analysis of Switching Noise Suppression of SMPS Boards Using Segmentation Method (#10180)***Myunghoi Kim (Hankyong National Univ.), Dongkyu Roh, Sungseok Jung, Kyumin Kwak (LIG Nex1 Co., Ltd., Daejeon, Korea),***TU-PM-I-FOR-13****Differential-Skew Mitigation by Rotating Meshed Ground (#10186)***Chenyu Wang, Kengo Iokibe, Yoshitaka Toyota (Okayama Univ.)***TU-PM-I-FOR-14****Novel Intermodulation Reference for Passive Intermodulation Measurement Calibration (#10187)***Xiong Chen (Xi'an Jiaotong Univ.), Qianwen Chen (Hunan University), Yongning He (Xi'an Jiaotong Univ.)***TU-PM-I-FOR-15****A High-efficiency and Wideband Tunable Converter Based on a Petal Metasurface (#10200)***Fengxia Li, Hai-Yan Chen, Yang Zhou, Linbo Zhang, Di-Fei Liang, Haipeng Lu, Jian-Liang Xie, Long-Jiang Deng (Univ. of Electronic Science and Technology of China)***TU-PM-I-FOR-16****Some Typical Problems in Electromagnetic Compatibility Testing of An Electric Vehicle (#10213)***Dou Manyi, Sun Tianfei (Chongqing Dexin Robot Testing Center Co.,Ltd)***TU-PM-I-FOR-17****Smart-Tag EMI Comparison of Different Program Skills (#9845)***Cheng-You Chang (Feng Chia Univ.), Shih-Yi Yuan (Feng Chia Univ.), Chia-Hung Su (Electronics Testing Center), Jian-Li Dong (Bureau of Standards, Metrology and Inspection (BSMI))***TU-PM-I-FOR-18****Ultralow-noise Isolated Switch-Mode Power Supply (#10292)***Yumeng Yang, Yuefei Wang, Xiao Jiang (Univ. of Science and Technology of China)***TU-PM-I-FOR-19****Bias-dependent Power Distribution Network Impedance Analysis with MOS Capacitor (#10304)***Dong-Hyun Kim, Subin Kim, Junyong Park, Youngwoo Kim, Sumin Choi, Kyungjun Cho, Joungho Kim (Korea Advanced Inst. of Science and Technology)***TU-PM-I-FOR-20****An Ultrathin Multi-Band Flexible Metamaterial Absorber with Gradient Resistive Sheet Unit (#10305)***Guorui Zhang, Yang Zhou, Peiheng Zhou, Hai-Yan Chen, Long-Jiang Deng, Di-Fei Liang (Univ. of Electronic Science and Technology of China)***TU-PM-I-FOR-21****Wave Modulating for Oblique Incidence Based on Coding Metasurface (#10313)***Yang Zhou, Guorui Zhang, Peiheng Zhou, Hai-Yan Chen, Di-Fei Liang (Univ. of Electronic Science and Technology of China)***TU-PM-I-FOR-22****Planar Hybrid Common Mode Filter (#10351)***Jens Werner (Jade Univ. of Applied Science), Jan Preibisch, Jennifer Schuett (Nexperia Germany GmbH)*

Technical Sessions – Tuesday, 15 May 2018 (PM-II)

Rooms	Room #331	Room #332	Room #333
04:00pm – 06:00pm	TM-01: IC EMC (I) Chair(s): Fabian Vargas (Catholic Univ. – PUCRS, Brazil) Sonia Ben Dhia (LAAS CNRS, France)	SS-08: Simulation and Testing for Automotive EMC (I) Chair(s): Sergio Amedeo Pignari (Politecnico di Milano, Italy)	SS-12: EM Shielding Technology for Mobile Devices Chair(s): Hyunho Park (Univ. of Suwon, South Korea) Chulsoon Hwang (Missouri Univ. of Science and Technology, USA)
04:00pm	TU-PM-II-TM-01-1 Systematic Analysis of ESD-Induced Soft-Failures As A Function of Operating Conditions (#9271) <i>Omid Hoseini Izadi, Ahmad Hosseinbeig, David Pommerenke (Missouri S & T), Hideki Shumiya, Junji Maeshima, Kenji Araki, (Sony GM&O Corp.)</i>	TU-PM-II-SS-08-1 Analysis of the Galvanic Coupling of DC-Link Capacitors in a High-Voltage Bus of an Electric Car (#8582) <i>Mathias Magdowski, Ralf Vick (Otto-von-Guericke Univ.), Martin Obholz (Volkswagen AG)</i>	TU-PM-II-SS-12-1 Effect of Contact Resistance on Conformal Shield Package for Mobile DRAM (#10021) <i>Jungho Jin, Choongpyo Jeon, Byounggug Min, Heonsang Lim, and Jungki Kim (Samsung Electronics)</i>
04:20pm	TU-PM-II-TM-01-2 Measurement of the Susceptibility to EMI of ICs with Two-Tone Interference (#9918) <i>Franco Fiori, Marco Brignone Aimonetto (Politecnico di Torino)</i>	TU-PM-II-SS-08-2 Prediction of Common Mode Current in Cable Harnesses (#9656) <i>Tamar Makharashvili, Tamar Makharashvili, Sameer Arun Walunj, Ruijie He, Brian Booth, Kerry Martin, Chulsoon Hwang, Daryl Beetner (Missouri S & T)</i>	TU-PM-II-SS-12-2 Optimized FPC Design with EMI Film (#9335) <i>Liang-Yu Shih, Hank Lin, Chung-Han Tsai, Bin-Chyi Tseng (ASUSTek Computer Inc.)</i>
04:40pm	TU-PM-II-TM-01-3 Emission Reduction with Spread Spectrum Clocking for Switched Capacitor Buck Converter (#10223) <i>Volha Subotskaya (Infineon Technologies AG), Kyrylo Chermiak (Infineon Technologies AG), Klaus Hoermaier (Infineon Technologies AG), Bernd Deutschmann (Graz Univ. of Technology)</i>	TU-PM-II-SS-08-3 Modeling and Evaluation of Common-mode Interference Coupling Effects on Sensitive Cable in Motor Drive System (#9899) <i>Tao Wang, Kaikai Chen, Zhichao Zheng, Henglin Chen (Zhejiang Univ.)</i>	TU-PM-II-SS-12-3 Embedded Multilayer Interleaved Comb Capacitor for Package-level EMI Protection (#9936) <i>Hai Au Huynh, YoungBong Han (Sungkyunkwan Univ.), Jisoo Hwang, Eunseok Song (Samsung Electronics), SoYoung Kim (Sungkyunkwan Univ.)</i>
05:00pm	TU-PM-II-TM-01-4 Analysis of Conducted-EMI Noise Influence on the Effectiveness of an EDAC Technique to Mitigate Soft Errors in Ionizing Radiation Environment (#10254) <i>Roger Goerl, Fabian Vargas (Catholic Univ. – PUCRS), Nilberto H. Medina, Nemitala Added, Vitor A. P. de Aguiar (Sao Paulo Univ.), Marcilei A. G. da Silveira (Centro Univer. – FEI), Paulo Villa, Eduardo Bezerra (Federal Univ. of Santa Catarina)</i>	TU-PM-II-SS-08-4 EMC Simulation of Automotive Ethernet Systems (#9319) <i>Andreas Barchanski, Matthias Tröscher (CST - Computer Simulation Technology GmbH)</i>	TU-PM-II-SS-12-4 Shielding Effectiveness Estimation for Shielding Box Having Unknown Aperture (#9840) <i>Jung-Hwan Hwang (Electronics & Telecom. Research Inst.), Hyun Ho Park (Univ. of Suwon), Sang-il Kwak, Dong-wook Sim, Jong-Hwa Kwon (Electronics & Telecom. Research Inst.)</i>
05:20pm	TU-PM-II-TM-01-5 Modeling the Internal Activity of an FPGA for Conducted Emission Prediction Purpose (#10265) <i>Chaimae Ghfiri (IRT SAINT EXUPERY), Alexandre Boyer, Sonia Ben Dhia (LAAS CNRS), Andre Durier (IRT SAINT EXUPERY), Christian Marot (AIRBUS)</i>	TU-PM-II-SS-08-5 Analysis of Electromagnetic Wave in Automotive Cabin Using Complex Poynting's Theorem (#10215) <i>Shinji Fukui, Noboru Maeda (Soken, Inc.), Fengchao Xiao (Univ. of Electro-Communications), Yoshio Kami (Univ. of Electro-Communications)</i>	TU-PM-II-SS-12-5 Fast Evaluation of Low Frequency Near Field Magnetic Shielding Effectiveness (#9763) <i>Fethi Benyoubi (Univ. of Nantes), Lionel Pichon, Mohamed Bensetti, Yann Le Bihan (Group of Electrical Engineering Paris), Mouloud Feliachi (Univ. of Nantes)</i>
05:40pm	TU-PM-II-TM-01-6 Fault State Behaviour of Smart Power Devices During Electromagnetic Interference (#10341) <i>Bernd Deutschmann, Paul Kastner, Gunter Winkler (Graz Univ. of Technology)</i>	TU-PM-II-SS-08-6 Dynamic EMI Characteristic Analysis of Vehicle Electric-drive System operated in Multi-operation Conditions (#9337) <i>Ying Xiong, Xiaolin Du, Chunming Li and Xiaofan Zhao (China North Vehicle Research Inst.)</i>	

Technical Sessions – Tuesday, 15 May 2018 (PM-II)

Rooms	Room #334	Room #335	Room #336
04:00pm – 06:00pm	TC-04: EMI Control Methods Chair(s): John G. Kraemer (Rockwell Collins, USA) Arokiaswami Alphones (Nanyang Technological Univ., Singapore)	SS-05: Potential Electromagnetic Techniques for Booming Wireless Communications (II) Chair(s): Hsi-Tseng Chou (National Taiwan Univ.) Ding-Bing Lin (National Taiwan Univ. of Science and Technology)	TC-05: Lightning and System Protection Chair(s): Yoshihiro Baba (Doshisha Univ., Japan) W. H. Siew (Univ. of Strathclyde, Scotland)
04:00pm	TU-PM-II-TC-04-1 Electromagnetic Resonance Analysis of a Shielding Enclosure with Apertures Excited by a Plane Wave (#9193) <i>Bao-Lin Nie, Pei Xiao, Ping-An Du (Univ. of Electronic Science and Technology of China)</i>	TU-PM-II-SS-05-1 Beam Switching Antenna for Small Cell Applications (#9696) <i>Chia-Lun Tang, Shih-Chi Lai, Gary Chiou (Auden Techno Corporation)</i>	TU-PM-II-TC-05-1 LMA Observation of Upward Flashes at Säntis Tower: Preliminary Results (#9529) <i>A. Mostajabi (Swiss Federal Inst. of Techno^{#1}), N. Pienda (Meteorological Service of Catalonia), D. Romero (Tech. Univ. of Catalonia^{#2}), M. Azadifar^{#1}, O. V. d. Velde^{#2}, J. Montanya^{#2}, M. Rubinstein (Inst. for Info. & Comm.Techno.), F. Rachidi (EPFL)</i>
04:20pm	TU-PM-II-TC-04-2 Shielding Effectiveness Prediction of Metallic Structures with Thin Slots Using FDTD (#8969) <i>Liping Yan, Mingjiang Fang, Xiang Zhao (Sichuan Univ.), Qiang Liu, Haijing Zhou (Inst. of Applied Physics and Computation Mathematics)</i>	TU-PM-II-SS-05-2 Fast Conical-Cut Radiation Measurement by Using Lens Fed Reflector for 5G Antenna Application at mmW Frequencies (#9771) <i>YuHsi Tsai (Training Research Co.,Ltd.), Hairui Liu (China Academy of Information and Communications Technology), YueiTing Tsai (Training Research Co.,Ltd.)</i>	TU-PM-II-TC-05-2 Modeling of Different Charge Transfer Modes in Upward Flashes Constrained by Simultaneously Measured Currents and Fields (#9421) ★BEST EMC PAPER FINALIST★ ★BEST STUDENT PAPER FINALIST★ <i>Lixia He, M. Azadifar, Quanxin Li (EPFL^{#1}), M. Rubinstein (Univ. of Appl.Sci. of Western Switzerland^{#2}), V. Rakov (Univ. of Florida), Arturo Mediano (Univ. of Zaragoza), Davide Pavanello^{#2}, Mario Paolone^{#1}, Hongyan Xing, (Nanjing Univ. of Info. Sci. & Techno.), Farhad Rachidi^{#1}</i>
04:40pm	TU-PM-II-TC-04-3 Effect of Conducting Surfaces on the Performance of Common Mode Chokes (#9479) ★BEST EMC PAPER FINALIST★ ★BEST STUDENT PAPER FINALIST★ <i>Carlos Domínguez-Palacios, Pablo Gonzalez-Vizuete, Joaquín Bernal Mendez (Universidad de Sevilla)</i>	TU-PM-II-SS-05-3 Dual-band patch antenna array for WLAN applications (#9862) <i>I-Fong Chen, Chia-Mei Peng (Jinwen Univ. of Science and Technology)</i>	TU-PM-II-TC-05-3 Modeling of LEMP Propagation in the Lossy Atmosphere (#8678) <i>Thang H. Tran (National Inst. of Technology, Tsuruoka College), Yoshihiro Baba (Doshisha Univ.), Vijaya Somu (Univ. of Florida), Vladimir A. Rakov (Univ. of Florida)</i>
05:00pm	TU-PM-II-TC-04-4 A Joint Method of EMT and DEMATEL In Analyzing HEMP Coupling Effect of Phased Array Radar Antenna System (#9482) <i>Shenshen Luan, Shuguo Xie (Beihang Univ.^{#1}), Wei Yan (Beijing Inst. of Radio Measurement), Ziyao Chen^{#1}</i>	TU-PM-II-SS-05-4 Multiple OAM Modes Generated by Patch Antenna (#10085) <i>Dandan Liu, Liangqi Gui, Han Chen, Zixiao Zhang, Tao Jiang (Huazhong Univ. of Science and Technology)</i>	TU-PM-II-TC-05-4 FDTD Computation of Lightning Currents in a Multilayer CFRP Panel with a Conductivity Matrix Approach (#9056) ★BEST STUDENT PAPER FINALIST★ <i>Koki Ueno, Teruo Umeda, Yoshihiro Baba (Doshisha Univ.), Hiroyuki Tsubata, Takayuki Nishi (SUBARU Corporation)</i>
05:20pm	TU-PM-II-TC-04-5 Simulation Analysis on the Capacity Occupancy of Reactive Power Equipment under DC Biasing of Transformers (#9088) <i>Zhicheng Xie, Hai Qian, Jun Deng, Jinwei Chu, Zhiliang Lu, Xiaoxing Wei, Chao Zhang (Extra-High Voltage Transmission Company of CSG)</i>	TU-PM-II-SS-05-5 Design of Balanced Wideband Filtering Circularly Polarized Antenna Using Quasi-Self-Complementary Structure (#9897) <i>Pei-Shan Ho, Ching-Her Lee, Dau-Ming Wu, Hsun-Hsiang Chen (National Changhua Univ. of Education), Chung-I Hsu (Yunlin Univ. of Sci. & Techno.)</i>	TU-PM-II-TC-05-5 Grounding Strategies for Solar PV Panels (#10226) <i>Ahmad Ayub, WH Siew (Univ. of Strathclyde), Faisal Peer Mohamed (Military Technological College)</i>
05:40pm		TU-PM-II-SS-05-6 Modularized Prototype of 5G mmWave Base Station System at 38 GHz (#9912) <i>Li-Hsin Yen, Yang-Chih Huang (National Taiwan Univ.^{#1}), Ssu-Hao Su, Che-Yao Fan, Fang-Hsien Chu (ASUSTek Computer Inc^{#2}), Fang-Yao Kuo (Industrial Techno. Research Inst.), Hsin-Chia Lu, Shau-Gang Mao, Kun-You Lin^{#1}, Jackson Yen^{#2}, Tzong-Lin Wu^{#1}</i>	TU-PM-II-TC-05-6 Some Examples of EMI/EMC in Wind Power Systems and Large Solar Parks (#10356) <i>Ener Salinas (ABB Corporate Research), Kazuo Yamamoto (Chubu University), Leonardo Severo (WEG), Alexandre Pinhel (MAELSTROM ENG & INOVAÇÃO)</i>

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Overview of Technical Program on 16 May (Wednesday)

Color codes:		Special Sessions (SS)	Topical Meetings (TM)	Regular Sessions (TC, SC)	Plenary Talks	Interactive Forum (IF)	Experiment & Demonstration (ED)		Poster Sessions	Exhibition	
Date	Time		Room #331	Room #332	Room #333	Room #334	Room #335	Room #336			
16 May (WE)	08:30am 10:10am	AM-I	TC-10: SI/PI (III)	TC-06: Spectrum	TC-09: CEM and EMI	TC-09: Computational Electromagnetics (III)	SS-04: Emerging Technologies and EMC	SS-13: EMC Issues Related to Common-mode Noise	08:30pm - 10:30pm E&D Session II	Open	
	10:10am 10:30am		Tea Break								
	10:30am 12:30pm	AM-II	TC-10: SI/PI (IV)	SS-03: Wireless Technology and Wireless Power Transfer (I)	TC-02: EMC Measurement (II)	<p style="text-align: center; color: red; margin: 0;">Time: 11:00am – 12:30pm</p> <p style="text-align: center; margin: 0;">Plenary Talk III: Marriage of Computational Electromagnetics and Electromagnetic Compatibility <i>Weng Cho Chew, Purdue University, USA</i></p> <p style="text-align: center; margin: 0;">Plenary Talk IV: Wireless Chip Area Network (WCAN): A New Paradigm for RF Microelectronics and Radio Communications <i>Yueping Zhang, Nanyang Technological University, Singapore</i></p>		12:00pm-2:00pm Interactive forum II			
	12:30pm 01:30pm		Lunch								E&D Session III
	01:30pm 03:30pm	PM-I	TM-01: IC EMC (II)	SC-07: Aeronautics and Space EMC	SS-09: Hardware Security for IoT Devices (I)	TC-04: EMI	TC-12: EMC for Emerging Wireless Technology (II)	SS-01: EMC for Wind Farms and Solar PV Plants	3:00pm-5:00pm Interactive forum III & Best Student Paper Session		
	03:30pm 04:00pm		Tea Break								
	04:00pm 05:20pm	PM-II	TM-05: Biomedical Electromagnetic (I)	SS-08: Simulation and testing for Automotive EMC (II)	SS-11: Advance measurement technologies for 5G (I)	TC-09: Computational Electromagnetics (IV)	TC-11: Nano & Advanced Materials	TC-05: IEMI and Transients	E&D Session IV		
	07:00pm 10:00pm		Symposium Banquet Dinner Cum Award Presentation (7pm – 10pm)								

Technical Sessions – Wednesday, 16 May 2018 (AM-I)

Rooms	Room #331	Room #332	Room #333
	TC-10: SI/PI (III)	TC-06: Spectrum	TC-09: CEM and EMI
08:30am – 10:10am	Chair(s): Xiaoning Ye (Intel, USA) Kye-Yak See (Nanyang Technological Univ., Singapore)	Chair(s): Jin Meng (Naval Univ. of Engineering, China) Xudong Chen (National Univ. of Singapore)	Chair(s): Hideki Asai (Shizoka Univ., Japan) Wen-Yan Yin (Zhejiang Univ., China)
08:30am	WE-AM-I-TC-10-1 Characterization and Verification of Gigabit Ethernet-based Bus Systems in Vehicles (#9596) <i>Sanaz Mortazavi, Detlef Schleicher (Volkswagen AG), Friedel Gerfers (Technical Univ. of Berlin)</i>	WE-AM-I-TC-06-1 A Spectral Fitting Method for Designing Spectrum Compatibility Sequence with Low Correlation Sidelobes (#8923) <i>Hao Wu, Jin Meng, Qing Wang, Jin ling Xing, Liang Zhou (National Key Laboratory of Science and Technology on Vessel Integrated Power System, Naval Univ. of Engineering)</i>	WE-AM-I-TC-09-1 Efficient Modeling of Multi-Coil Wireless Power Transfer Systems using Combination of Full-Wave Simulation and Equivalent Circuit Modeling (#8664) <i>Peiyu Liang (Beihang Univ.^{#1}), Heinz-D. Brüns (Hamburg Univ. of Technology), Qi Wu^{#1}, Christian Schuster (Hamburg Univ. of Technology)</i>
08:50am	WE-AM-I-TC-10-2 Noise Isolation of PDN Using In-Package Filter in LTCC-Based System-in-Package (SiP) (#9008) <i>Yue-Hui Huang, Mu-Shui Zhang, Yi-Fei He, Quan-Chao Su (Sun Yat-sen Univ.)</i>	WE-AM-I-TC-06-2 Adaptive Spatial Filtering for Interference Cancellation between Co-site Phased Arrays (#8955) <i>Qing Wang, Fangmin He, Hongbo Liu, Kui Zhao, Jin Meng (National Key Laboratory of Science and Technology on Vessel Integrated Power System, Naval Univ. of Engineering)</i>	WE-AM-I-TC-09-2 An Optimized GPU Accelerated Pre-Conditioned Biconjugate Gradient Stabilized Method to Speed up the Scalar Potential Finite-Difference Method (#9568) <i>Tongning Wu, Chen Zhang, Congsheng Li (China Academy of Information and Communications Technology)</i>
09:10am	WE-AM-I-TC-10-3 EMI Shielding Film Modeling Study for High-Speed Interconnect in Flexible Printed Circuit Board (#9799) <i>Hanfeng Wang, Ken Wu, Tony Lin (Google Inc.)</i>	WE-AM-I-TC-06-3 Analysis of Quantification Effects on Digital-analog Mixed Adaptive Interference Cancellation System (#9048) <i>Jinling Xing, Meng Jin, Songhu Ge, Jian Tang, Gouchuan Jie (Naval Univ. of Engineering)</i>	WE-AM-I-TC-09-3 Electromagnetic-Thermal Simulation of Lorentz Media by the DGTD Method (#9607) ★BEST EMC PAPER FINALIST★ <i>Yilin Dong, Min Tang (Shanghai Jiao Tong Univ.), Ping Li (The University of Hong Kong), Junfa Mao (Shanghai Jiao Tong Univ.)</i>
09:30am	WE-AM-I-TC-10-4 Analysis and Experimental Validation of Power Distribution Network with Multi-slots Parallel-Plane Structure (#9187) <i>Yan Li (Hebei Univ. of Technology), Wen-Yuan Cao (Zhejiang Univ.), Pan-Pan Zuo, Zhi-Yi Gao, Hongxing Zheng (Hebei Univ. of Technology), Er-Ping Li (Zhejiang Univ.)</i>	WE-AM-I-TC-06-4 An Improved Foster Model of Common-Mode Inductor and its Application in EMI Filter Design (#9212) <i>Haoqi Zhu (HangZhou Dianzi Univ.), Dongliang Liu (HangZhou Dianzi Univ.), Hao Chen (Zhejiang Univ.), Guozhu Chen (Zhejiang Univ.)</i>	WE-AM-I-TC-09-4 An Improved Multi-level Weighting Additive Summation Method for Electromagnetic Compatibility Evaluation (#10084) <i>Yumei Wang, Wentao Xu (China Ship Development and Design Center)</i>
09:50am	WE-AM-I-TC-10-5 Common-Mode Noise Reduction of Bended Differential Lines using Meander Line Structure (#9644) <i>Jaehyuk Lim, Seungjin Lee, Jaehoon Lee (Korea Univ.), Yonghoon Kim, Dan Oh (Samsung Electronics, Inc.)</i>		WE-AM-I-TC-09-5 A Novel Inverse Method for Autonomous UAV Line Patrolling with Magnetic Sensors (#9510) <i>Feng Gao, Sen Wang (Shaanxi Electric Power Research Inst.), Yang Wu, Gen Zhao, Bo Wang, Jun Hu (Tsinghua Univ.)</i>

Technical Sessions – Wednesday, 16 May 2018 (AM-I)

Rooms	Room #334	Room #335	Room #336
08:30am – 10:10am	<p>TC-09: Computational Electromagnetics (III)</p> <p>Chair(s): Tzong-Lin Wu (National Taiwan Univ.) Yueping Zhang (Nanyang Technological Univ., Singapore)</p>	<p>SS-04: Emerging Technologies and EMC</p> <p>Chair(s): Wee Jin Koh (DSO National Laboratories, Singapore) Frank Leferink (Univ. of Twente and THALES, Netherlands)</p>	<p>SS-13: EMC Issues Related to Common-mode Noise</p> <p>Chair(s): Yoshitaka Toyota (Okayama Univ., Japan)</p>
08:30am	<p>WE-AM-I-TC-09-6</p> <p>Some Analytical Formulas for the Directivity Calculation of Antenna Arrays (#9963) A. Shlamberg, Haim Matzner (HIT-Holon Inst. of Technology), E. Levine (Afeka College of Engineering)</p>	<p>WE-AM-I-SS-04-1</p> <p>The Interconnected Wireless World, a Major Challenge for EM-Coexistence (#10174) Frank Leferink (Univ. of Twente and THALES, Netherlands)</p>	<p>WE-AM-I-SS-13-1</p> <p>Modal Analysis of Reflection of TDR in Overhead Distribution Lines (#9773) Tohlu Matsushima, Takashi Hisakado, Osami Wada (Kyoto Univ.), Shimpei Oe, Tsuyoshi Sasaoka (Kansai Electric Power Co. Inc.)</p>
08:50am	<p>WE-AM-I-TC-09-7</p> <p>Time-Domain Coupling Analysis of Unequal Length MTLs Excited By Plane Wave (#10026) Qiang Liu (Inst. of Applied Physics and Computation Mathematics), Zhihong Ye (Chongqing Univ. of Posts and Telecommunications)</p>	<p>WE-AM-I-SS-04-2</p> <p>Probability Statistical Method of Assisting Electromagnetic Compatibility Index Decision-making (#10088) Yumei Wang, Wentao Xu (China Ship Development and Design Center)</p>	<p>WE-AM-I-SS-13-2</p> <p>Mode Analysis of Adjacent Differential-Paired Lines Using Extended Mixed-Mode S-Parameters (#10227) Wansoo Nah, Nan Zhang (Sungkyunkwan Univ.)</p>
09:10am	<p>WE-AM-I-TC-09-8</p> <p>Prediction of Radiated Emission Pattern for the Device Under Test (#9166) Sreenivasulu Reddy Vedicherla (Robert Bosch Engineering and Business Solutions Private Limited), Peter Kralicek (Robert Bosch GmbH)</p>	<p>WE-AM-I-SS-04-3</p> <p>EMC Design with Embedded Metamaterial Technology (#9667) Richard Xian-Ke Gao (Inst. of High Performance Computing, A*STAR), Si-Ping Gao (National Univ. of Singapore), Hui Min Lee (Inst. of High Performance Computing, A*STAR), Wanlan Yang (Singapore Univ. of Technology and Design)</p>	<p>WE-AM-I-SS-13-3</p> <p>Measurement Precision Improvement to Estimate the Immunity Performance for In-vehicle Ethernet (#10002) Miyuki Mizoguchi, Hiroyuki Mori, Youhei Sekiya, Noboru Maeda (Soken, Inc.), Kaoru Yoshida, Yoshiroh Hirata, Takashi Yasuda, Hideki Goto (Toyota Motor Corporation)</p>
09:30am	<p>WE-AM-I-TC-09-9</p> <p>A Novel Line Position Recognition Method in Transmission Line Patrolling with UAV Using Machine Learning Algorithms (#9562) Yang Wu, Yi Luo, Gen Zhao, Jun Hu (Tsinghua Univ.)</p>	<p>WE-AM-I-SS-04-4</p> <p>Status of IEMI Activities at the End of 2017 (#10381) Bill Radasky (Metatech Corporation)</p>	<p>WE-AM-I-SS-13-4</p> <p>A Study on Design of Differential-Paired Lines with Meander Delay Line by Preference Set-based Design Method (#10273) Yoshiki Kayano, Yoshio Kami, Haruo Ishikawa, Fengchao Xiao, Hiroshi Inoue (Univ. of Electro-Communications)</p>
09:50am	<p>WE-AM-I-TC-09-10</p> <p>3D Modelling and Analysis of Parasitic Couplings between Surface-Mount Components of EMI Filters (#9630) Aivis Asmanis, Deniss Stepins, Gundars Asmanis, Leonids Ribickis (Riga Technical Univ.)</p>	<p>WE-AM-I-SS-04-5</p> <p>Non-Ionizing EMF Hazard in the 21th Century (#10101) Wee Jin Koh, Shabbir Moochhala (DSO National Laboratories)</p>	<p>WE-AM-I-SS-13-5</p> <p>Fast and Accurate Yield Rate Prediction of PCB Embedded Common-Mode Filter with Artificial Neural Network (#9103) ★BEST SI/PI PAPER FINALIST★ ★BEST STUDENT PAPER FINALIST★ Yi-Ting Lin, Chi-Hsuan Cheng, Tzong-Lin Wu (National Taiwan Univ.)</p>

Technical Sessions – Wednesday, 16 May 2018 (AM-II)

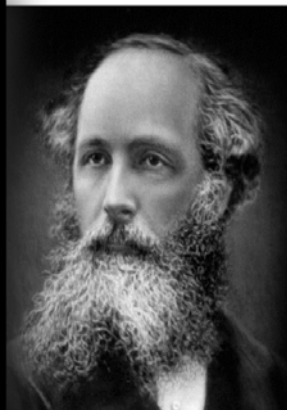
Rooms	Room #331	Room #332	Room #333
10:30am – 12:30pm	TC-10: SI/PI (IV) Chair(s): Jose Schutt-Aine (Univ. of Illinois, USA) Zi-Liang Liu (National Univ. of Singapore)	SS-03: Wireless Technology & Wireless Power Transfer (I) Chair(s): Seungyoung Ahn (KAIST, South Korea) Eakhwan Song (Kwangwoon Univ., South Korea)	TC-02: EMC Measurement (II) Chair(s): John Ladbury (National Inst. of Standards and Technology, USA) Takehiro Morioka (National Inst. of Advanced Industrial Science and Technology, Japan)
10:30am	WE-AM-II-TC-10-1 Rapid Electro-Thermal Modeling for 3D Integration Using Circuit Simulation Techniques (#10179) <i>Jose Schutt-Aine, Gene Shiue (Univ. of Illinois)</i>	WE-AM-II-SS-03-1 Magnetic Field Distribution of Resonance Coupling Coils of Wireless Charging System for EV (#9400) <i>Yu Cao, Li Zhai, Liwen Lin, Tao Zhang (Beijing Inst. of Technology)</i>	WE-AM-II-TC-02-1 Influence of Test Table Materials on Radiated Immunity Test : Report on Investigation Using a Giant Anechoic Chamber (#9217) <i>Hiro Shida (Tokin EMC Engineering), Osami Wada (Kyoto Univ.), Yoshitsugu Okuda (KEC Electron. Industry Development Center^{#1}), Hisashi Ninomiya (Roland Corp.), Yasushi Asaji (Murata Manufacturing Co., Ltd.), Masahiro Inoue^{#1}, Kenji OTANI (AIST)</i>
10:50am	WE-AM-II-TC-10-2 Quantification of EMI for Power-Ground Plane and Novel EBG Structure for SSN Suppression (#9263) ★BEST STUDENT PAPER FINALIST★ <i>Panpan Zuo, Yan Li, Yanbo Xu, Hongxing Zheng (Hebei Univ. of Technology), Er-Ping Li (Zhejiang Univ.)</i>	WE-AM-II-SS-03-2 Improved Efficiency Characteristics of Wireless Power Charging System for Superconducting MAGLEV Train Using Inserted Permanent Magnets (#10049) <i>Yoon Do Chung (Suwon Science college), Ji Seong Kim (Suwon Science College)</i>	WE-AM-II-TC-02-2 Electromagnetic Field Coupling to Planar and Triangular Multiconductor Transmission Lines in a Reverberation Chamber (#9135) ★BEST EMC PAPER FINALIST★ <i>Johanna Kasper, Mathias Magdowski (Otto-von-Guericke-Univ.), Rushan Amanov, Marat Gimranov, Evgenii Fedorov, Andrey Ferenets (Kazan National Research Technical Univ.), Ralf Vick (Otto-von-Guericke-Univ.)</i>
11:10am	WE-AM-II-TC-10-3 Floorplanning for 3D-IC with Through-Silicon Via Co-Design Using Simulated Annealing (#9127) <i>Hai-Ying Zhu, Mu-Shui Zhang, Yi-Fei He, Yue-Hui Huang (Sun Yat-Sen Univ.)</i>	WE-AM-II-SS-03-3 Dual-Mode RFID Tag Antenna on Flexible Silk (#10171) <i>Xiaoyang Yin, Si-Ping Gao, Yongxin Guo (National Univ. of Singapore)</i>	WE-AM-II-TC-02-3 A Study on Characteristics of 10 MHz to 30 MHz in CISPR 25 ALSE Method (#9146) <i>Takanori Uno (Denso Emc Engineering Service Corp.), Koji Maeda (Aisin Seiki), Toshiyasu Tanaka (Microwave Factory), Yoshitsugu Okuda (KEC Electron. Industry Development Center), Osami Wada (Kyoto Univ.)</i>
11:30am	WE-AM-II-TC-10-4 1 to 4 Way Wideband Power Divider using Substrate Integrated Waveguide and Modified Wilkinson Structures (#9578) ★BEST SI/PI PAPER FINALIST★ <i>Vignesh Shanmugam Bhaskar, Eng Leong Tan, Li King Ho Holden, Tse Man Siu (Nanyang Technological Univ.)</i>	WE-AM-II-SS-03-4 Single Metal Path Power Transfer Technology without Return Path at 13.56MHz ISM Band (#10102) <i>Bonyoung Lee, Franklin Bien, Woojin Park, Seongkyu Song (Ulsan National Inst. of Science and Technology)</i>	WE-AM-II-TC-02-4 Simultaneous Multi-probe Measurements for Rapid Evaluation of Reverberation Chambers (#9599) <i>Dwi Mandaris (Univ. of Twente), Robert Vogt-Ardatjew (Univ. of Twente), Eike Suthau (Lumiloop), Frank Leferink (Univ. of Twente and Thales, Netherlands)</i>
11:50am	WE-AM-II-TC-10-5 Scalable Platform Power Integrity Design Approach with Standard PI Model (SPIM) and Unified PI Target (#9953) <i>Kinger Cai, Jimmy Hsiao, Chi-te Chen, Yun Ling, Steven Ji, Denis Chen (Intel Corporation)</i>	WE-AM-II-SS-03-5 Simulation-based Conducted Susceptibility Testing for Wireless Power Transfer(WPT) Systems (#10283) <i>Junho Joo, Eakhwan Song (Kwangwoon Univ.), Jonghwa Kwon, Sang il Kwak (Electronics and Telecom. Research Inst.)</i>	WE-AM-II-TC-02-5 Problems with Stirred Immunity Measurements in a Reverberation Chamber - Corrections to DO-160G Section 20.6 (#9227) <i>John Ladbury (National Inst. of Standards and Technology, USA)</i>
12:10pm	WE-AM-II-TC-10-6 Modeling and Measurement of a Common-Mode Filter based on the 3-D Transmission Line Structure (#10288) <i>Yong-Sheng Li, Er-Ping Li (Zhejiang Univ.), Madhavan Swaminathan (Georgia Inst. of Technology)</i>		

Technical Sessions – Wednesday, 16 May 2018 (AM-II)

Rooms	Room #334	Room #335	Room #336
11:00am – 12:30pm	<p>Plenary Talks III & IV <i>Chairs: Richard Xian-Ke Gao, A*STAR IHPC</i> <i>Jun Fan, Missouri University of Science and Technology</i></p>		
11:00am	<p>Plenary Talk III: Marriage of Computational Electromagnetics and Electromagnetic Compatibility <i>Weng Cho Chew, Purdue University, USA</i></p>		
11:45am	<p>Plenary Talk IV: Wireless Chip Area Network (WCAN): A New Paradigm for RF Microelectronics and Radio Communications <i>Yueping Zhang, Nanyang Technological University, Singapore</i></p>		

“ It was a great step in science when men became convinced that, in order to understand the nature of things, they must begin by asking, not whether a thing is good or bad, noxious or beneficial, but of what kind it is? And how much is there of it? Quality and Quantity were then first recognised as the primary features to be observed in scientific inquiry.

- James Clerk Maxwell



Interactive Forum Sessions – Wednesday Afternoon, 16 May 2018

16 May 2018, Wednesday 12:00-2:00pm
Venue: Foyer (outside Room #331 to #336), Level 3

*Chair(s): Hui Min Lee (Inst. of High Performance Computing, Singapore),
Eng Kee Chua (Nanyang Technological Univ., Singapore)*

WE-PM-I-FOR-1

Demonstration of Electromagnetic Waves Propagation along Transmission Lines on iPad (#9586)
Eng Leong Tan, Ding Yu Heh (Nanyang Technological Univ.)

WE-PM-I-FOR-2

The VLF Field Generated by a Loop Antenna in the Ionosphere (#9113)
Hui Ran Zeng (Zhejiang Univ.)

WE-PM-I-FOR-3

Field Generated by The Artificial Ionospheric Modulation of ELF/VLF Wave on the Sea Surface (#9115)
Zhuhong Lin (Zhejiang Univ.)

WE-PM-I-FOR-4

Immunity Tests in a Reverberation Chamber Using a Correction Factor (#9975)
Sang il Kwak, Jung-Hwan Hwang, Dong-uk Sim, Jong-Hwa Kwon (Electronics and Telecommunications Research Inst.)

WE-PM-I-FOR-5

A Novel Simulation Method of Passive Intermodulation in Electrically Large-size Reflector Antennas (#9011)
Yun Li (China Academy of Space Technology (Xi'an)), He Bai (Xi'an Jiaotong University), Wanzhao Cui, Jun Li, Xiang Chen, Rui Wang, Xinbo Wang, Tiancun Hu

WE-PM-I-FOR-6

The Study of Strong Terahertz Wave as Future Electromagnetic Pulses (#8657)
Ji Zhao, Xiaofan Zhao (China north Vehicle Insitute Noveri)

WE-PM-I-FOR-7

The Insertion Loss Calculation Research of Multiple Filters in Series and Parallel Connection (#9594)
Lei Zhang, Zhihua Zhao, Jianxuan Li, Jin Meng (Naval Univ. of Engineering)

WE-PM-I-FOR-8

Investigation on the Terminal Response of a Twisted-Wire Pair Excited by EMP (#9537)
Qi-Feng Liu (Science and Technology on EMC Laboratory), Qi Wu (Beijing Hang Kong Hang Tian Univ.), Sheng-quan Zheng, Yu Zuo, Li-Tao (Science and Technology on EMC Laboratory)

WE-PM-I-FOR-9

Effects of Package Structure on the Patch Antennas with Different Shapes (#9276)
Xiao Jia Huang, Mei Song Tong (Tongji Univ.)

WE-PM-I-FOR-10

Design of a Broadband LNA for a Ship Receiver System (#9273)
Tong Zhang, Yiting Shuai (China Ship Development and Design Center(CSDDC))

WE-PM-I-FOR-11

An EMC Perspective of the Benefits of a Seawater Antenna over a Metal Antenna (#8922)
Zhou Liang, Wang Qing, Wu Hao, Meng Jin (Navy Univ. of Engineering)

Interactive Forum Sessions – Wednesday Afternoon, 16 May 2018**16 May 2018, Wednesday 12:00-2:00pm****Venue: Foyer (outside Room #331 to #336), Level 3***Chair(s): Hui Min Lee (Inst. of High Performance Computing, Singapore),
Eng Kee Chua (Nanyang Technological Univ., Singapore)***WE-PM-I-FOR-12****Study of Electromagnetic Field Distribution in the Human Body under High Voltage Power Lines (#8812)***Peng He (Ningbo Entry-Exit Inspection and Quarantine Bureau Technical Center of the PR China), Yueping Yang, Lei Zhou (State Grid Zhejiang Ninghai Country Power Supply Company), Lu Jia, Ping Yu, Zhuoyuang Wang (Ningbo Institute), Yuguang Hong, Ningfeng Zhu (State Grid Zhejiang Ninghai Country Power Supply Company)***WE-PM-I-FOR-13****Method Of Data Acquisition And Map Generation For Radio Frequency Electromagnetic Fields Exposure Level (#8675)***Rumeng Tan (China Telecom Co., Ltd.), Tong Wu (National Inst. of Metrology, China), Kun Zhu (Beijing Safety Test Technology Co., Ltd.), Shaochuan Chen, Senwen Luo (China Telecom Co., Ltd.)***WE-PM-I-FOR-14****Adaptive Wideband Homomorphic Filtering For Electromagnetic Interference Source Imaging Testing System (#9602)***Yanju Zhu, Shuguo Xie (Beihang Univ.)***WE-PM-I-FOR-15****Estimation of Induced Positions of External Electromagnetic Fields by Measuring Waveform at Both Ends of Transmission Line (#9480)***Xiangyu Chen, Toshikazu Sekine, Yasuhiro Takahashi (Gifu Univ.)***WE-PM-I-FOR-16****Analysis of Interference Caused by Intermodulation in Multi-tone Radiated Immunity Tests (#9393)***Jinlong Li, Shiping Ma, Qi Liu, Zeng Gong, Heqing Tian, Shanyi Jin (EMC Laboratory, Shanghai Inst. of Measurement and Testing Technology)***WE-PM-I-FOR-17****A LPDA Free-Space Factor Calibration (#9180)***Hironari Tanaka (VCCI Council / Ohtama Calibration Service Co., Ltd.), Hiroyuki Shimano (VCCI Council/S-Tech Inc.), Masaru Yoshihara (VCCI Council/Riken Environmental System Co., Ltd.), Hidenori Muramatsu (VCCI Council)***WE-PM-I-FOR-18****Principle and Electromagnetic Immunity of ADAS Millimeter-wave Radar (#9025)***Yue Zhang, Xu Zhang, Yifu Ding, Guangyu Zhang, Li Jiang (China Automotive Technology and Research Center)***WE-PM-I-FOR-19****A Novel Dual Channel Receive Front-end Module with MEMS Technology (#9603)***Yongzhi Zhao, Shaodong Wang, Hongjiang Wu (Hebei Semiconductor Research Inst.)***WE-PM-I-FOR-20****Broadband Lumped Circuit Parameter Extraction Method Based on PEEC (#9332)***Sili Tao, Junping He, Xin Li (Shenzhen Graduate School, Harbin Inst. of Technology)***WE-PM-I-FOR-21****Dielectric Constant And Loss-Tangent Extraction Using Near-Field Technology And Phase Delay Method (#9110)***Sung-Mao Wu, Sheng-Wei Guan, Cheng-Dao Li, LiXuan Tsai, Chun-Ting Kuo (Advanced Packaging Integrated Technology Center College of Engineering, National Univ. of Kaohsiung), Chia-Hung Su (Electronics Testing Center), Ming-Kun Hsieh (Bureau of Standards, Metrology and Inspection, M.O.E.A.)***WE-PM-I-FOR-22****Electromagnetic Emissions from GaN Power IC at Varying Distance and Frequency (#9046)***Vivek Sangwan, Dipesh Kapoor, Cher Ming Tan (Chang Gung Univ.)*

Technical Sessions – Wednesday, 16 May 2018 (PM-I)

Rooms	Room #331	Room #332	Room #333
01:30pm – 03:30pm	TM-01: IC EMC (II) Chair(s): Bernd Deutchmann (Graz Univ. of Technology, Austria) Sonia Ben Dhia (LAAS CNRS, France)	SC-07: Aeronautics and Space EMC Chair(s): Narvaez Pablo (Jet Propulsion Laboratory, USA) Peter S. W. Leung (City Univ. of Hong Kong, China)	SS-09: Hardware Security for IoT Devices (I) (Recommended by TC-05) Chair(s): William A. Radasky (Metatech Corporation, USA) Yuichi Hayashi (Nara Inst. of Science and Technology, Japan)
01:30pm	WE-PM-I-TM-01-1 Conducted Immunity of Bandgap in SOI Technology after Electrical Stress Aging (#10276) Jianfei Wu (National Univ. of Defense Technology ^{#1}), Binhong LI (Inst. of Microelectronics of Chinese Academy of Sciences), Hongli Zhang (Tianjin Binhai Civil-military Integrated Innovation Inst.), Hongyi Wang, Liming Zheng ^{#1}	WE-PM-I-SC-07-1 Investigation on Susceptibility of UAV to Radiated IEMI (#9172) Yazhou Chen, Dongxiao Zhang, Erwei Cheng, Xiaojia Wang (Shijiazhuang Mechanical Engineering College)	WE-PM-I-SS-09-1 Introduction to EM Information Security for IoT Devices (#10208) Yuichi Hayashi (Nara Inst. of Science and Technology), Ingrid Verbauwheide (imec-COSIC KU Leuven), William A. Radasky (Metatech Corporation)
01:50pm	WE-PM-I-TM-01-2 ICIM-CPI : Integrated Circuits Immunity Model : Conducted Pulse Immunity : Description, Extraction and Example (#10280) Andre Durier (Irt Saint Exupery), Priscila Fernandez-Lopez (Valeo), Jean Luc Levant (Microchip), Christian Marot (Airbus)	WE-PM-I-SC-07-2 Enforcing Correlation Between Conducted and Radiated Susceptibility Test Setups for Aerospace Involving Shielded Cables (#9563) ★BEST EMC PAPER FINALIST★ Giordano Spadacini, Ludovico Badini, Flavia Grassi, Sergio Pignari (Politecnico di Milano), Alexandre Piche (Airbus Defence & Space – Space Systems)	WE-PM-I-SS-09-2 Comparison of two Setups for Contactless Power Measurements for Side-Channel Analysis (#10350) Arthur Beckers, Benedikt Gierlichs, Josep Balasch, Ingrid Verbauwheide (imec-COSIC KU Leuven)
02:10pm	WE-PM-I-TM-01-3 Immunity Analysis of an LDO using Identification of Operating Region Transitions (#10297) Lammert Duijmans, Dusan Milosevic (Eindhoven Univ. of Technology), Arnoud van der Wel, Ravi Karadi (NXP Semiconductors), Peter Baltus (Eindhoven Univ. of Technology)	WE-PM-I-SC-07-3 Analysis of Signal Environment on 1030/1090MHz Aeronautical Surveillance Systems (#10098) Takuya Otsuyama, Junichi Honda, Junichi Naganawa, Hiromi Miyazaki (Electronic Navigation Research Institute)	WE-PM-I-SS-09-3 Extention of Signal-to-Noise Ratio Measurement Method to Byte-by-Byte Side-Channel Attack (#10243) Kengo Iokibe, Toshiaki Teshima, Yusuke Yano, Yoshitaka Toyota (Okayama Univ.)
02:30pm	WE-PM-I-TM-01-4 The Shielding Effect of a Multi-Cable Harness as Function of IC Output Termination Impedance (#10349) Herbert Hackl (NXP Semiconductors Austria), Bernd Deutchmann, Bernhard Auinger (Graz Univ. of Technology), Anna Gheonjian (EMCoS Ltd.)	WE-PM-I-SC-07-4 Electromagnetic Environment Threat Level Requirement for Military Aircraft Susceptibility Testing In Support of High Intensity Radiated Field Qualification (#9345) Gordon Slack, Adrian Monk, Timothy J Duggan (QinetiQ)	WE-PM-I-SS-09-4 Weighted Key Enumeration for EM-based Side-Channel Attacks (#10382) Yang Li, Xiaohan Meng, Shuang Wang, Jian Wang (Nanjing Univ. of Aeronautics and Astronautics)
02:50pm	WE-PM-I-TM-01-5 Partial and Indirect Non-reciprocal S-parameter Measurement for (m+n)-Port Fixture with DUT (#10357) Yuya Kojima, Toshikazu Sekine, Yasuhiro Takahashi (Gifu Univ.), Noboru Maeda, Shinji Fukui (Soken, Inc.), Yasuyuki Ishikawa (Denso Corporation)		WE-PM-I-SS-09-5 Detection of IEMI Fault Injection using Voltage Monitor Constructed with Fully Digital Circuit (#10240) Daisuke Fujimoto, Yuichi Hayashi (Nara Inst. of Science and Technology), Arthur Beckers, Josep Balasch, Benedikt Gierlichs, Ingrid Verbauwheide (imec-COSIC KU Leuven)

Technical Sessions – Wednesday, 16 May 2018 (PM-I)

Rooms	Room #334	Room #335	Room #336
01:30pm – 03:30pm	<p>TC-04: EMI</p> <p>Chair(s): Ding-Bing Lin (National Taiwan Univ. of Science and Technology) Jin Meng (Naval Univ. of Engineering, China)</p>	<p>TC-12: EMC for Emerging Wireless Technology (II)</p> <p>Chair(s): Lie Liu (General Test Systems, USA) Franco Fiori (Politecnico di Torino, Italy)</p>	<p>SS-01: EMC for Wind Farms and Solar PV Plants</p> <p>(Supported & sponsored by EMC TC-07; technical sponsored by CUGRE SC C4)</p> <p>Chair(s): W. H. Siew (Univ. of Strathclyde, Scotland) Ener Salinas (ABB, Sweden)</p>
01:30pm	<p>WE-PM-I-TC-04-1</p> <p>Analytical Description of Contacting Concepts for Shielding Enclosures (#8691) Michael Kuehn, Marcel Messer (AUDI AG), Dr.-Ing. Dr.-Ing. Habil. Robert Weigel (Lehrstuhl für Technische Elektronik Universität Erlangen-Nürnberg)</p>	<p>WE-PM-I-TC-12-1</p> <p>Susceptibility of 2.4GHz Low-Power Receivers to Low Frequency EMI (#9485) ★BEST STUDENT PAPER FINALIST★ Marco Brignone Aimonetto, Franco Fiori (Politecnico di Torino)</p>	<p>WE-PM-I-SS-01-1</p> <p>Loss of Equipotential During Lightning Ground Potential Rise on Large Earthing Systems (#10346) Pieter H Pretorius (Terratech, South Africa)</p>
01:50pm	<p>WE-PM-I-TC-04-2</p> <p>Identification of Electromagnetic Interferences Based on Adaptive Sparsest Time - Frequency Analysis (#8926) Peng Li, Zhongyuan Zhou, Mingjie Sheng (Southeast Univ.)</p>	<p>WE-PM-I-TC-12-2</p> <p>Millimeter-wave Propagation Measurement During Rainy Days in Beijing (#9694) Congzheng Han, Yongheng Bi, Shu Duan (Inst. of Atmospheric Physics, Chinese Academy of Sciences)</p>	<p>WE-PM-I-SS-01-2</p> <p>Conducted and Radiated Interference on the interconnections of Renewable Energy Farms (#10042) Patricio E. Munhoz-Rojas (Instituto Lactec)</p>
02:10pm	<p>WE-PM-I-TC-04-3</p> <p>A Multi-tone Interference Equivalence Method for Analyzing the Impact of LFM Interference on the BER of Communications Data Link System (#8962) Kui Zhao, Fangmin He, Hongbo Liu, Qing Wang, Jin Meng, Lei Zhang (Naval Univ. of Engineering)</p>	<p>WE-PM-I-TC-12-3</p> <p>A Novel Stochastic Integral Equation Method for MIMO Communication in Diffuse Multipath Environments (#10380) Zhen Peng, Shen Lin (Univ. of New Mexico)</p>	<p>WE-PM-I-SS-01-3</p> <p>Lightning Protection and EMC Issues of Renewable Energy Sources (#10191) Toshihisa Funabashi (Nagoya Univ.), Kazuo Yamamoto (Chubu Univ.), Shozo Sekioka (Shonan Inst. of Technology)</p>
02:30pm	<p>WE-PM-I-TC-04-4</p> <p>A Novel Heatsink with Mushroom-type EBG Structure for EMI Radiation Suppression (#9317) Hang Jin, Le Zhang, Xiaoli Yang, Ping Cheng, Er-Ping Li (Zhejiang Univ.), Yaojiang Zhang (Huawei)</p>	<p>WE-PM-I-TC-12-4</p> <p>Some Phase-Shifterless Scanning Array Antennas (#10055) L. Volynsky, J. Vargas, Haim Matzner, E. Levine (HIT-Holon Inst. of Technology)</p>	<p>WE-PM-I-SS-01-4</p> <p>Immunity of Solar Inverters to Transient Waveforms (#10373) William A. Radasky, Edward Savage (Metatech Corporation)</p>
02:50pm	<p>WE-PM-I-TC-04-5</p> <p>Resonator Approach for Simple Calculation of Total Microwave Energy Accumulated Inside the Shielding Box (#9082) Valentin Butin, Pavel Kundyshev (Dukhov Research Inst. of Automatics)</p>	<p>WE-PM-I-TC-12-5</p> <p>A 60 GHz Incabin Wireless Transmitting System with Interference Mitigation (#9864) Wei-Jiang Zhao (Inst. of High Performance Computing (IHPC), A*STAR)</p>	<p>WE-PM-I-SS-01-5</p> <p>Behaviour of Surge Protective Devices under Lightning Ground Potential Rise (#10339) Pieter H Pretorius (Terratech, South Africa)</p>
03:10pm	<p>WE-PM-I-TC-04-6</p> <p>EMI Prediction of Packages by Deep Neural Network (#10193) Hang Jin, Hanzhi Ma, Er-Ping Li (Zhejiang Univ.)</p>	<p>WE-PM-I-TC-12-6</p> <p>Using Low Cost Base-Band Digitizer for Fast Magnetic Emission Test (#10176) Iwan Setiawan (Univ. of Twente), Robert Vogt-Ardatjew (Univ. of Twente), Frank Leferink (Univ. of Twente and THALES, Netherlands)</p>	<p>WE-PM-I-SS-01-6</p> <p>Harmonics Induced by Inverters from a Photovoltaic Plant in the Power Grid (#10354) Petre-Marian Nicolae, Radu - Florin Marinescu, Marian-Stefan Nicolae, Diana - Cristina Marinescu, Ileana - Diana Nicolae (Univ. of Craiova)</p>

Interactive Forum Sessions – Wednesday Afternoon, 16 May 2018

16 May 2018, Wednesday 3:00-5:00pm

Venue: Foyer (outside Room #331 to #336), Level 3

Chair(s): Hui Min Lee (Inst. of High Performance Computing, Singapore),
Eng Kee Chua (Nanyang Technological Univ., Singapore)

WE-PM-II-FOR-1

Analyzing the EMC Performance of an Automotive Display Module through 3D Electromagnetic Simulation (#10117)

Lin Biao Wang, Lei Ma, Eng Ann Koh (Continental Automotive Singapore Pte Ltd)

WE-PM-II-FOR-2

Near-Field Scan Technique for Reducing Radiated Emissions In Automotive EMC (#9470)

Andrei Marius Silaghi (Univ. "Politehnica" Timisoara), Aipu Relu (Continental AG Romania), Aldo De Sabata (Univ. "Politehnica" Timisoara), Petre-Marian Nicolae (Univ. of Craiova)

WE-PM-II-FOR-3

The Dispersion Relation of Surface Plasmon Polaritons Of Metal Bulk (#9931)

Lingxi Hu, Min Hu, Sen Gong, Xiaodong Feng, Tao Zhao, Renbin Zhong, Shenggang Liu (Univ. of Electronic Science and Technology of China)

WE-PM-II-FOR-4

Research on EMI Control Techniques of Airborne Power Electronic Equipment (#10194)

Ping Xu, Jiahe Mei, Jiahui Qin (Harbin Engineering Univ.)

WE-PM-II-FOR-5

Design Of Tapered Periodic Meta-Surfaces For Suppressing Edge Electromagnetic Scattering (#9441)

Hai-Yan Chen, Lian-Di Han, Li-Juan Lu, Di-Fei Liang, Xiao-Long Weng, Hai-Peng Lu, Jian-Liang Xie, Long-Jiang Deng (Univ. of Electronic Science and Technology of China)

WE-PM-II-FOR-6

Solution to Range and Velocity Ambiguities Based on Frequency Diversity MIMO Radar (#10275)

Xiang Lan, Min Zhang (Xidian Univ.)

WE-PM-II-FOR-7

Compiler options effect on System-level Near Field EMI (#10046)

Shih-Yi Yuan, Po-Yien Lin (Feng Chia Univ.), Chia-Hung Su (Electronics Testing Center), Tzung-Hsien Chen (Bureau of Standards, Metrology & Inspection)

WE-PM-II-FOR-8

The Impact of TID Effect on EMS of PDSOI Voltage Reference Circuits (#10327)

Zhihang An (Beijing Jiaotong Univ.), Binhong Li (Inst. of Microelectronics of Chinese Academy of Sciences), Jianfei Wu (National Univ. of Defense Technology)

WE-PM-II-FOR-9

Electromagnetic Coupling Effects of Spacecraft Solar Panel (#8692)

Bao-Feng Cao, Yi Zheng (Research Inst. of Chemical Defense), Jian-Xun Su (Communication Univ. of China), Xue-Qin Zhang, Xin Li (Research Inst. of Chemical Defense), Lin Quan (Inst. of Aerospace Engineering), Yu Zhou (Aerospace Orient Red Satellite Co., Ltd.), Shi-Jin Wang (Beijing Tian-gong Ke-yi Radiation Technology Co., Ltd.)

WE-PM-II-FOR-10

Modeling IC Components Based on TLP I-V Curves and Transient Responses from SEED Perspective (#9564)

Yize Wang, Yuan Wang, Guangyi Lu, Gang Du, Xing Zhang, Ru Huang (Peking Univ.)

WE-PM-II-FOR-11

Electromagnetic Scattering Model of the Near Field Waves Induced by a Moving Vessel (#10271)

Letian Wang, Min Zhang, Pengbo Wei (Xidian Univ.)

WE-PM-II-FOR-12

Time Domain FEM Computational Approach for Calibration of Surface Scan Method (#9210)

Susanne Bauer, Andreas Gleinser, Gergely Koczka, Gunter Winkler, Oszkar Biro, Bernd Deutschmann (Graz Univ. of Technology)

Celebrating 10th Anniversary of APEMC



Footsteps of 10-Year APEMC

www.apemc.org/Past_APEMC/index.html



Technical Sessions – Wednesday, 16 May 2018 (PM-II)

Rooms	Room #331	Room #332	Room #333
04:00pm – 05:20pm	TM-05: Biomedical Electromagnetic (I) Chair(s): Shaoying Huang (Singapore Univ. of Technology and Design) Eisuke Hanada (Saga Univ. Graduate School of Science and Engineering, Japan)	SS-08: Simulation and Testing for Automotive EMC (II) Chair(s): Sergio Amedeo Pignari (Politecnico di Milano, Italy)	SS-11: Advanced Measurements Technologies for 5G (I) Chair(s): Farhad Rachidi (Swiss Federal Institute of Technology, Switzerland) Lie Liu (General Test Systems, USA)
04:00pm	WE-PM-II-TM-05-1 Parametric study of Impact of Static Magnetic Field on Human Cell Viability (#9579) <i>Weinong Sun, Yaqing He, Yinliang Diao, Peter Sai-Wing Leung, Timothy Yun-Ming Siu, Yuen-Chong Kong (City Univ. of Hong Kong)</i>	WE-PM-II-SS-08-1 Estimation for S-parameters of a Differential Communication Transceiver IC Applying an Indirect Measurement Method (#10249) <i>Noboru Maeda, Miyuki Mizoguchi, Hiroyuki Mori (Soken, Inc.), Takashi Yasuda, Hideki Goto (Toyota Motor Corporation)</i>	WE-PM-II-SS-11-1 Measured MIMO Throughput Under Different Transmit Power of DUT (#10255) <i>Jun Li, Y. H. Qi, W. Yu, F. H. Li (Hunan Univ.)</i>
04:20pm	WE-PM-II-TM-05-2 In-vitro Measurement System for Induced Voltages in Medical Implants in Magnetic Resonance Imaging (#10467) <i>Sven Kuehn, Niels Kuster (IT'IS Foundation ETH Zurich), Oliver Munz, Maria Cabanes (Schmid&Partner Engineering AG (SPEAG))</i>	WE-PM-II-SS-08-2 Current Distribution in Shielded Cable-Connector Systems for Power Transmission in Electric Vehicles (#10352) <i>Stephan Frei, Katharina Hermes, Abid Mushtaq, Robert Nowak (TU Dortmund Univ.)</i>	WE-PM-II-SS-11-2 Novel OTA Evaluation for WLAN MIMO UE based on Improved Radiated Two-stage Method (#10317) <i>Qianwen Chen, He Wen, Yihong Qi (Hunan Univ.)</i>
04:40pm	WE-PM-II-TM-05-3 Electromagnetic Interference Evaluation at Myoelectric Signal Detector for Robot Control (#9949) <i>Wei Liao (Shanghai Univ. of Engineering Science), Jianqing Wang (Nagoya Inst. of Technology)</i>	WE-PM-II-SS-08-3 Bulk Current Injection Quantification of BroadR-Reach® Protocol Based System by Measurements and Modeling (#10331) <i>Waldemar Schulz (TU Dortmund), Nicola Toscani, Flavia Grassi (Politecnico di Milano), Patrick DeRoy (CST of America, LLC), Ryan Frost, Cyrus Rostamzadeh (Bosch)</i>	WE-PM-II-SS-11-3 Probe Calibrations for Phased Array Measurement (#10320) <i>Jiyu Wu (Hunan Univ.), Yihong Qi, J. Qi (Hunan Univ.), Francesco de Pauli, Antonio Orlandi (Univ. of L'Aquila)</i>
05:00pm	WE-PM-II-TM-05-4 Numerical Calculations of Body Temperature during Thermal Treatment by Capacitive Heating Device (#9992) <i>Kazuyuki Saito, Norihiro Tsukamoto (Chiba Univ.)</i>		WE-PM-II-SS-11-4 Recent Progress of Radiated Two Stage Method for MIMO OTA Measurement (#10365) <i>Penghui Shen, Yihong Qi (Hunan Univ.), Wei Yu (General Test Systems Inc.)</i>

Technical Sessions – Wednesday, 16 May 2018 (PM-II)

Rooms	Room #334	Room #335	Room #336
04:00pm – 05:20pm	<p>TC-09: Computational Electromagnetics (IV)</p> <p>Chair(s): Matthias Tröschler (CST, Germany) Chao-Fu Wang (National Univ. of Singapore)</p>	<p>TC-11: Nano & Advanced Materials</p> <p>Chair(s): Sungtek Kahng (Incheon National Univ., South Korea) Alessio Tamburrano (Sapienza University of Rome, Italy)</p>	<p>TC-05: IEMI and Transients</p> <p>Chair(s): William Radasky (Metatech Corporation, USA) Yanzhao Xie (Xi'an Jiaotong Univ., China)</p>
04:00pm	<p>WE-PM-II-TC-09-1</p> <p>Efficient Electromagnetic Simulation of PCB with SPICE elements by Using HIE-FDTD method (#9306)</p> <p><i>Yuta Inoue, Asai Hideki (Shizoka Univ.)</i></p>	<p>WE-PM-II-TC-11-1</p> <p>Small Left-handed Balun designed to Increase MIMO Antenna Isolation for AP Systems (#9070)</p> <p><i>Changhyeong Lee, Dajung Han, Heejun Park, Muhammad Salman Khattak, Abdul Rehman Khan, Sungtek Kahng (Incheon National Univ.)</i></p>	<p>WE-PM-II-TC-05-1</p> <p>Performance Improvement for Sub-nanosecond Marx Generator Based on Avalanche Transistors by Considering the Traveling Wave Process (#9575)</p> <p><i>Mingxiang Gao, Yanzhao Xie, Yangxin Qiu, Yahan Hu, Kejie Li (Xi'an Jiaotong Univ.)</i></p>
04:20pm	<p>WE-PM-II-TC-09-2</p> <p>Modeling of EMP Coupling to Lossless MTLs in Time Domain Based on Analytical Gauss-Seidel Iteration Technique (#9597)</p> <p><i>Jun Guo, Yan-zhao Xie (Xi'an Jiaotong Univ.), Farhad Rachidi (The Swiss Federal Inst. of Technology)</i></p>	<p>WE-PM-II-TC-11-2</p> <p>Smart Metasurface with Non-reciprocity for Fog Layer in IoT Environment (#9104)</p> <p><i>Toshiro Kodera (Meisei Univ.)</i></p>	<p>WE-PM-II-TC-05-2</p> <p>Experiments and Comparisons of Power to Failure for SiGe-Based Low-Noise Amplifiers under High-Power Microwave Pulses (#8879)</p> <p><i>Xiang Chen, Liang Zhou, Wen-Yan Yin, Jun-Fa Mao (Shanghai Jiaotong Univ.)</i></p>
04:40pm	<p>WE-PM-II-TC-09-3</p> <p>Parallel DGTD Method for Transient Electromagnetic Problems (#9600)</p> <p><i>Haoqing Chen (Jiangsu Normal Univ.), Zhenbao Ye (Inst. of Applied Physics and Computational Mathematics), Lei Zhao (Jiangsu Normal Univ.), Haijing Zhou (Inst. of Applied Physics and Computational Mathematics), Wenhua Yu (Jiangsu Normal Univ.)</i></p>	<p>WE-PM-II-TC-11-3</p> <p>Plasmonic Enhanced Emission from Nanostructured Embedded InGaN/GaN MQWs with Silver Nanoparticles (#9229)</p> <p><i>Chew Beng Soh (Singapore Inst. of Technology), Guo Sheng Kwang (Univ. of Glasgow), Simon Ching Man Yu (Singapore Inst. of Technology), Cheng Yuan Yang (IMRE A*STAR)</i></p>	<p>WE-PM-II-TC-05-3</p> <p>About the Possibility of Mistakes When Using Unipolar Electric Field Pulses When Assessing Electronic Device Immunity to UWB Pulses (#9040)</p> <p><i>Yury Parfenov (Russian Academy of Sciences), Vladimir Chepelev (Russian Academy of Sciences), William Radasky (Metatech Corporation)</i></p>
05:00pm	<p>WE-PM-II-TC-09-4</p> <p>Mutual Coupling Analysis of Multiple On-Board Antennas with Sub-Domain MoM-PO Method (#9401)</p> <p><i>Zi-Liang Liu, Chao-Fu Wang (National Univ. of Singapore)</i></p>	<p>WE-PM-II-TC-11-4</p> <p>Modelling of Electrical Percolation And Conductivity of Carbon Nanotube Based Polymer Nanocomposites (#9336)</p> <p><i>Lekshmi Mohan, Sumitha K, Sindhu T K (National Inst. of Technology Calicut)</i></p>	<p>WE-PM-II-TC-05-4</p> <p>Antenna Gain of Folded Rhombic Antenna for Transient Electric-field Measurements (#10078)</p> <p><i>Shinobu Ishigami, Masaki Saka, Ken Kawamata (Tohoku Gakuin Univ.)</i></p>



EMC COMPO 2019

21-23, October,
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The 12th IEEE International Workshop on the Electromagnetic Compatibility of Integrated Circuits

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The achievement in terms of operating frequency and integration of semiconductor technology are constantly creating new challenges in EMC, which must necessarily be addressed at both integrated circuits and system level. Keeping up-to-date is of paramount importance to be successful in this field. The International IC EMC Workshop was created in Toulouse, France, in 1999. Following the EMC COMPO events held in Angers of France, Munich, Torino, Toulouse, Dubrovnik, Nara of Japan, Edinburgh, St Petersburg, **EMC Compo 2019** is intended to be a place for addressed to researchers and engineers from industry and from academia. **EMC Compo 2019 in Hangzhou, China** will be the first workshop to be held in China. The workshop focus on emission and susceptibility issues in digital, analogue and mixed-signal integrated circuits. The most recent advances in simulation and measurement techniques, models, standards, tools and design methodologies will be discussed. A Technical Exhibition will provide tool and equipment manufacturers and suppliers an opportunity to display their products and services to potential clients.

Symposium Topics

- Artificial Intelligence in IC EMC
- Design of 2D and 3D system-on-chip (SoC) for EMC
- Hardware-software co-design and integration for IC EMC
- Emission and immunity-aware IC design
- ESD immunity techniques at IC level
- Signal and power integrities at IC level
- Combined effects of radiation and aging on IC EM sensitivity
- Harsh environment effects on IC EM sensitivity
- IC EMC for avionics and automotive applications
- EMC-aware analog and mixed signal circuits
- RF ICs EMC
- IC-level measurement techniques for EMC
- IC-level modeling techniques for EMC
- EMC simulation of ICs
- EMC in microwave ICs
- EMC-aware software solutions
- FPGA-based embedded systems and EMC

Important Dates

<input type="checkbox"/> Preliminary Paper Submission (3 pages in PDF)	12 July 2019
<input type="checkbox"/> Abstract Submission (500 words to 1-page)	
<input type="checkbox"/> Tutorial /workshop proposal	
<input type="checkbox"/> Notification of review feedback	16 Aug. 2019
<input type="checkbox"/> Final Paper Due	05 Sept. 2019

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 Jeremy Raoult, Montpellier University, France
 Jianfei Wu, NUDT China
 John Dawson, University of York, England
 Kieran O' Leary, Mixed Signal Systems United Kingdom
 Kamel Abouda, NXP France
 Mart Coenen, EMCICC Netherlands
 Masahiro Yamaguchi, Tohoku University Japan
 Matthieu Deloge, NXP France
 Mauro Merlo, ST Microelectronics, Italy
 Mohamed Ramdani, ESEO Angers France
 Osami Wada, Kyoto University Japan
 Tzong Lin Wu, National Taiwan University
 Renaud Gillon, ON Semiconductor Belgium
 Richard Perdriau, ESEO Angers France
 Sergey Shaposhnikov, Saint Petersburg Electrotechnical University Russia
 Sergey Miropolsky, Infineon Germany
 Shih-yi Yuan, Feng Chia University,
 Sonia Ben Dhia, LAAS-CNRS France
 Thomas Steinecke, Infineon Germany
 Todd Hubing, Clemson University United States
 Umberto Paoletti, Hitachi Ltd. Japan
 Wolfgang Wilkening, Bosch Germany

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Overview of Technical Program on 17 May (Thursday)

Color codes:

Special Sessions (SS)

Topical Meetings (TM)

Regular Sessions (TC, SC)

Date	Time		Room #331	Room #332	Room #333	Room #334	Room #335	Room #336	Exhibition	
17 May (TH)	08:30am 10:10am	AM-I	TM-05: Biomedical Electromagnetic (II)	TM-02: EMC in Railway Systems (II)	SS-11: Advance measurement technologies for 5G (II)	TM-03: Efficient and Accurate Simulation of Multi-Scale EMC & SI/PI Problems (I)	SS-05: Potential Electromagnetic Techniques for Booming Wireless Communications (III)	TM-04: EMC in Power Electronics and Smart Grid (II)	Open	
	10:10am 10:30am		Tea Break							
	10:30am 12:30pm	AM-II	TC-10: SI/PI (V)	SS-03: Wireless Technology and Wireless Power Transfer (II)	SS-09: Hardware Security for IoT Devices (II)	TM-03: Efficient and Accurate Simulation of Multi-Scale EMC & SI/PI Problems (II)	SS-05: Potential Electromagnetic Techniques for Booming Wireless Communications (IV)	TM-04: EMC in Power Electronics and Smart Grid (III)		
	12:30pm 01:30pm		Lunch							Closed
	01:30pm 03:30pm	PM-I	SS-02: Metamaterials /metasurfaces for Manipulations of Electromagnetic Waves	SS-14: Radio Frequency Remote Sensing	TC-02: EMC Measurement (III)	TM-03: Efficient and Accurate Simulation of Multi-Scale EMC & SI/PI Problems (III)	SS-06: Design and Modeling of Emerging EM Components and Devices (I)	TC-05: Electrostatic Discharge and Arcs		
	03:30pm 03:50pm		Tea Break							
	03:50pm 05:30pm	PM-II	TC-10: SI/PI (VI)	TC-04: EMI/EMC	TC-01/02/03: EMC Management, Measurement and Environment	TM-03: Efficient and Accurate Simulation of Multi-Scale EMC & SI/PI Problems (IV)	SS-06: Design and Modeling of Emerging EM Components and Devices (II)	TC-07: Low Frequency EMC		
-- The End --										

Technical Sessions – Thursday, 17 May 2018 (AM-I)

Rooms	Room #331	Room #332	Room #333
08:30am – 10:10am	<p>TM-05: Biomedical Electromagnetic (II)</p> <p>Chair(s): Kazuyuki Saito (Chiba Univ., Japan) Jianqing Wang (Nagoya Inst. of Technology, Japan)</p>	<p>TM-02: EMC in Railway Systems (II)</p> <p>Chair(s): Peter S. W. Leung (City Univ. of Hong Kong, China) Samuel Chan (Land Transport Authority, Singapore)</p>	<p>SS-11: Advanced Measurements Technologies for 5G (II)</p> <p>Chair(s): Lie Liu (General Test Systems, USA) Benoit Derat (Rohde & Schwarz, Italy)</p>
08:30am	<p>TH-AM-I-TM-05-1 Study on the Searching Strategies of Assessing the MRI RF-induced Heating for an Implantable Plate and Screw System (#9015) Xiaohu Ji, Meiqi Xia, Jianfeng Zheng, Ji Chen (Univ. of Houston), Wolfgang Kainz (Food and Drug Administration (FDA) Center for Devices and Radiological Health Silver Spring)</p>	<p>TH-AM-I-TM-02-1 Analysis of Induced Voltage at Close Proximity with High Voltage Cables of Electrified Railways (#8828) Tony W K LO, Peter Sai-Wing Leung (City Univ. of Hong Kong), Patrick Wong (EMC Consortium Limited), Timothy Yun-Ming Siu, Weinong Sun (City Univ. of Hong Kong)</p>	<p>TH-AM-I-SS-11-1 Fast Measurement of Phased Array Antenna for 5G Base Station (#10248) Qi Jin, P. H. Shen, Y. H. Qi, W. Yu, L. Liu (Shenzhen General Test Systems Inc.), S. Y. He (Hunan Univ.)</p>
08:50am	<p>TH-AM-I-TM-05-2 Impact on Human Exposure to Low Frequency Radiation with Psychological and Brainwave changes (#9465) Yaqing He, Weinong Sun, Peter S W Leung, Timothy Y M Siu, K T Ng (City Univ. of Hong Kong)</p>	<p>TH-AM-I-TM-02-2 Research on the Influence of Metal Groove on Wires Coupling in EMU (#9779) Yali Song (Beijing Jiaotong Univ.), Yinghong Wen (Beijing Jiaotong Univ.), Dan Zhang (Beijing Jiaotong Univ.), Lu Xing (Beijing Jiaotong Univ.), Liangde Ma (China Academy of Railway Sciences)</p>	<p>TH-AM-I-SS-11-2 A Measurement System for Passive Intermodulation with Real Time Environment Parameter Detection (#9867) Wanzhao Cui, Rui Wang, Jun Li (National Key Laboratory of Science and Technology on Space Microwave)</p>
09:10am	<p>TH-AM-I-TM-05-3 Managing the Electromagnetic Environment of Hospital IoT Systems (#9688) Eisuke Hanada (Saga Univ. Graduate School of Science and Engineering), Takato Kudou (Oita Univ.)</p>	<p>TH-AM-I-TM-02-3 German EMC Homologation Requirement EMV 06 (#10205) Lorenz Jung (Siemens AG)</p>	<p>TH-AM-I-SS-11-3 5G Antenna Characterization in the Far-Field: How Close Can Far-Field Be? (#9920) Benoit Derat (Rohde & Schwarz)</p>
09:30am	<p>TH-AM-I-TM-05-4 Solutions for EM Exposure Assessment of 5G Wireless Devices (#10457) Mark Douglas, S. Pfeifer, E. Neufeld, E. Carrasco, A. Christ, M. Capstick (IT'IS Foundation (Member of Zurich43)), S. Kuehn, K. Plkovic (Schmid & Partner Engineering AG (SPEAG)), T. Samaras (Aristotle Univ. of Thessaloniki), N. Kuster (Swiss Federal Institute of Technology Zurich (ETHZ))</p>	<p>TH-AM-I-TM-02-4 The Modeling and Simulation on Overall-train EMI of China Standardized High-speed Train (#10291) Junpeng Ji, Yikun Liu, Jingang Li (Xi'an Univ. of Technology), Wenjie Chen, Xu Yang (Xi'an Jiaotong Univ.)</p>	<p>TH-AM-I-SS-11-4 Equivalent Sources Approach on Radiation Performance Evaluation of Personal Wireless Devices with Head and Hand Phantom (#10237) Qingchun Luo (ShenZhen General Test System Inc.)</p>
09:50am	<p>TH-AM-I-TM-05-5 Development of Wearable ECG Based on Human Body Communication Technology (#10119) Yusuke Sawatari, Daisuke Anzai, Jianqing Wang (Nagoya Inst. of Technology)</p>	<p>TH-AM-I-TM-02-5 Simulations of Railway VCB Switching Noise (#10020) Umberto Paoletti, Kiyoto Matsushima (Hitachi, Ltd., Yokohama Research Laboratory)</p>	<p>TH-AM-I-SS-11-5 High-power Broadband Honeycomb Absorber for 5G Millimeter Wave Chambers (#10242) Y. Zhang, Y. J. Zhu, Y. H. Qi, W. Yu (General Test Systems Inc.), F. H. Li (Hunan Univ.), Lie Liu (General Test Systems Inc., Hunan Univ.)</p>

Technical Sessions – Thursday, 17 May 2018 (AM-I)

Rooms	Room #334	Room #335	Room #336
08:30am – 10:10am	<p>TM-03: Efficient and Accurate Simulation of Multi-scale EMC & SI/PI (I)</p> <p><i>Chair(s): Siping Gao (National Univ. of Singapore)</i> <i>Huapeng Zhao (Univ. of Electronic Science and Technology of China)</i></p>	<p>SS-05: Potential Electromagnetic Techniques for Booming Wireless Communications (III)</p> <p><i>Chair(s): Han-Chang Hsieh (Bureau of Standards, Metrology & Inspection, Taiwan)</i> <i>Chow-Yen-Desmond Sim (Feng Chia Univ., Taiwan)</i></p>	<p>TM-04: EMC in Power Electronics and Smart Grid (II)</p> <p><i>Chair(s): Henglin Chen (Zhejiang Univ., China)</i> <i>Flavia Grassi (Politecnico di Milano, Italy)</i></p>
08:30am	<p>TH-AM-I-TM-03-1 A Novel Hybrid 2D/Q-2D Finite Element Method for Power/Ground Plane Analysis (#10025) <i>Ping Li, Li Jun Jiang (The Univeristy of Hong Kong), Hakan Bagci (King Abdullah Univ. of Science and Technology)</i></p>	<p>TH-AM-I-SS-05-1 Design Procedure of A CPW-Fed Monopole Antenna For Dual-Band Operation (#8799) <i>Jun-Yu Lai, Ji-Xiang Zheng, Chien-Jen Wang (National Univ. of Tainan)</i></p>	<p>TH-AM-I-TM-04-1 Conducted Emissions Simulation Technology for an Inverter Device Integrated into the Motor (#9535) <i>Yoshitaka Nishiguchi (Soken, Inc.), Shinji Ohoka (Soken, Inc.), Yoshihiro Kida (Soken, Inc.), Kazutoshi Shiomi (DENSO CORPORATION)</i></p>
08:50am	<p>TH-AM-I-TM-03-2 A Combined 1D and 2D DGTD Method for Modeling Multilayer Power-Ground Planes with Narrow Slots (#10262) <i>Hui Min Lee (Inst. of High Performance Computing, A*STAR), Si-Ping Gao (National Univ. of Singapore), En-Xiao Liu (Inst. of High Performance Computing (IHPC), A*STAR)</i></p>	<p>TH-AM-I-SS-05-2 On the Simultaneous Switching Noise Suppression by the Integration of Z-shape Power Bus and Bandstop Filter (#8981) <i>Tse-Hsuan Wang, Lin-Zong Zheng, Ding-bing Lin, Min-Hung Hsieh (National Taiwan Univ. of Science and Technology)</i></p>	<p>TH-AM-I-TM-04-2 Variability Analysis of a Boost Converter Based on an Iterative and Decoupled Circuit Implementation of the Stochastic Galerkin Method (#9834) <i>Paolo Manfredi (Politecnico di Torino), Riccardo Trincherio (Politecnico di Torino), Dries Vande Ginste (Ghent Univ.)</i></p>
09:10am	<p>TH-AM-I-TM-03-3 Electromagnetic Analysis of Massive Vertical Interconnects for Dense Pin Assignment Optimization Using Multiple Scattering Techniques (#9944) <i>Boping Wu (Huawei Technologies)</i></p>	<p>TH-AM-I-SS-05-3 A Compact CPW-Fed Monopole Antenna For Dual-Band Circular Polarization (#8800) <i>Ji-Xiang Zheng, Jun-Yu Lai, Chien-Jen Wang (National Univ. of Tainan)</i></p>	<p>TH-AM-I-TM-04-3 Electromagnetic Modeling of High Voltage Multi-Level Converter Substations (#9850) <i>Didier Cottet, Bernhard Wunsch, Goran Eriksson, Filip Grecki, Magdalena Ostrogorska, Wojciech Piasecki, Jenny Skansens, Olof Andersson (ABB Switzerland Ltd.)</i></p>
09:30am	<p>TH-AM-I-TM-03-4 An Improved Expression of Via Barrel-Plate Capacitance Based on a Convergence Study (#8749) <i>Si-Ping Gao (National Univ. of Singapore), Francesco de Paulis (Univ. of L'Aquila), En-Xiao Liu (Inst. of High Performance Computing, A*STAR), Antonio Orlandi (Univ. of L'Aquila), Hui Min Lee (Inst. of High Performance Computing, A*STAR)</i></p>	<p>TH-AM-I-SS-05-4 An Ultrathin Wideband Capsule Antenna with Low Level Specific Absorption Ratio (#8871) <i>Mengjun Wang, Jun Zhao (Hebei Univ. Of Technology), Lulu Cai, Ping Ma (School of Electronic Information Engineering), Ze Yang (School of Electronic Information Engineering), Hongxing Zheng (School of Electronic Information Engineering)</i></p>	<p>TH-AM-I-TM-04-4 Broadband Models of High Voltage Power Transformers and Their Use in EMC System Simulations of High Voltage Substations. (#9870) <i>Bernhard Wunsch, Didier Cottet, Goran Eriksson (ABB Switzerland Ltd.)</i></p>
09:50am	<p>TH-AM-I-TM-03-5 Analysis of the Accuracy and Limitation of Contour Integral Equation Modeling of Planar Structures (#10312) <i>Kangning Li, Huapeng Zhao, Zhizhang Chen, Jun Hu (Univ. of Electronic Science and Technology of China)</i></p>	<p>TH-AM-I-SS-05-5 An Effective EMI-Suppression Technique for Modern Wideband Common-Mode Filters (#8954) <i>Cheng-Nan Chiu, Chien-Ting Kao, Yu-Chou, Tsung-Ching Lin (Yuan Ze Univ.), Han-Chang Hsien (3Bureau of Standards, Metrology and Inspection (BSMI) Ministry of Economic Affairs)</i></p>	<p>TH-AM-I-TM-04-5 Common Mode Noise Analysis of buck-boost converter for hybrid energy storage systems (#9057) <i>Minghai Dong, Hui Li, Qishui Zhong, Yingzhe Wu (Univ. of Electronic Science and Technology of China)</i></p>

Technical Sessions – Thursday, 17 May 2018 (AM-II)

Rooms	Room #331	Room #332	Room #333
10:30am – 12:30pm	TC-10: SI/PI (V) <i>Chair(s): Tzong-Lin Wu (National Taiwan Univ.) Binfang Wang (Institute of High Performance Computing, A*STAR, Singapore)</i>	SS-03: Wireless Technology and Wireless Power Transfer (II) <i>Chair(s): Seungyoung Ahn (KAIST, South Korea) Chulsoon Hwang (Missouri Univ. of Science and Technology, USA)</i>	SS-09: Hardware Security for IoT Devices (II) <i>Chair(s): William A. Radasky (Metatech Corporation, USA) Yuichi Hayashi (Nara Inst. of Science and Technology, Japan)</i>
10:30am	TH-AM-II-TC-10-1 A Pseudo-supervised Machine Learning Approach to Broadband LTI Macro-Modeling (#9481) <i>Jose Schutt-Aine, Thong Nguyen (Univ. of Illinois at Urbana - Champaign)</i>	TH-AM-II-SS-03-1 An Ambient Energy Harvester Using Metasurface (#10121) <i>Qi Zhao, Long Li, Xuanming Zhang, Xuefang Zhang, Jianing Chen (Xidian Univ.)</i>	TH-AM-II-SS-09-1 On the Evaluation of Electromagnetic Information Leakage from Mobile Device Screens (#10192) <i>Ville Yli-Mayry, Daisuke Miyata, Naofumi Homma (Tohoku Univ.), Yuichi Hayashi (Nara Inst. of Science and Technology), Takafumi Aoki (Tohoku Univ.)</i>
10:50am	TH-AM-II-TC-10-2 Most Energy-Efficient Input Voltage Function for RC Delay Line (#9457) <i>Radit Smunyahirun, Eng Leong Tan (Nanyang Technological Univ.)</i>	TH-AM-II-SS-03-2 Design of Toroidal Core for Magnetic Energy Harvester Near Power Line Considering Saturation (#10211) <i>Bunjin Park, Dongwook Kim, Jaehyoung Park, Yujun Shim, Seungyoung Ahn (KAIST), Jay Koo (Ferrarispower, Bundang-gu, Seongnam-si)</i>	TH-AM-II-SS-09-2 Information Leakage and Recovery from Multiple LCDs (#10197) <i>Dong Hoon Choi, Ho Seong Lee, Jong-Gwan Yook (Dept. Electrical and Electronic Engineering Yonsei Univ.)</i>
11:10am	TH-AM-II-TC-10-3 Electrical-Thermal Co-Simulation for Through Silicon Via and Active Tier in 3-D IC (#10199) <i>Qiu Min, Shi-Yun Zhou, Cheng Zhuo, Hang Jin (Zhejiang Univ.^{#1}), Jian-Ming Jin (Univ. of Illinois at Urbana Champaign), Er-Ping Li^{#1}</i>	TH-AM-II-SS-03-3 High Efficiency Wireless Power Transfer System Robust against Misalignment (#10246) <i>Chen Xu, Yuan Zhuang, Yi Huang, Jiafeng Zhou (Univ. of Liverpool), William W Lee (Zhejiang Univ.)</i>	TH-AM-II-SS-09-3 A Possible Information Leakage from DVI Cable Corresponding to Display Color (#10196) <i>Ho Seong Lee, Dong Hoon Choi, Jong-Gwan Yook (Yonsei Univ.)</i>
11:30am	TH-AM-II-TC-10-4 Statistical Eye-Diagram Estimation Method for High-Speed Channel with N-Tap Decision Feedback Equalizer (DFE) (#8771) <i>Junyong Park, Huijin Song, Dong-Hyun Kim, Sumin Choi, Jounggho Kim (Korea Advanced Inst. of Science and Technology)</i>	TH-AM-II-SS-03-4 The Study On Permeability Parameter of WPT Coil Substrate Effect of Shielding Effectiveness and Transfer Efficiency (#10250) <i>Wei-jia Li, Yun Wang, Chao Pang, Hui Chen, Di-Fei Liang, Long-Jiang Deng (Univ. of Electronic Science and Technology of China)</i>	TH-AM-II-SS-09-4 Range of Information Leakage from IoT Devices with Hardware Trojans (#10342) <i>Masahiro Kinugawa (National Inst. of Technology, Sendai College), Yuichi Hayashi (Nara Inst. of Science and Technology)</i>
11:50am	TH-AM-II-TC-10-5 Advanced PDN Analysis and Optimization within a 3D SoC, SiP, PCB Co-Design Environment (#9154) <i>Ralf Bruening, Narayanan T. V., Humair Mandvia (ZUKEN)</i>	TH-AM-II-SS-03-5 Wireless Power Transfer System for Unmanned Vehicle using T-shape Ferrite Structure (#10358) <i>Yujun Shin, Jaehyoung Park, Jonghoon Kim (Korea Advanced Inst. of Science and Technology^{#1}), Byunggi Kwon, Heehyun Eun (LIG Nex1), Seungyoung Ahn^{#1}</i>	
12:10pm	TH-AM-II-TC-10-6 Comprehensive Signal and Power Co-Investigation on DDR4 Simulation and Measurement (#9447) <i>Nick K. H. Huang, Chih-Yao Hsieh, Bin-Chyi Tseng, Liang-Yu Shih (ASUSTek Computer Inc.)</i>	TH-AM-II-SS-03-6 45-Degree Polarized Microstrip Grid Arrays for Millimeter-Wave Micro Base Station (#9995) <i>Shan Li, Li-Yun Shi, Lin-Sheng Wu (Shanghai Jiao Tong Univ.), Ying Liu (Xidian Univ.), Yueping Zhang (Nanyang Technological Univ.)</i>	

Technical Sessions – Thursday, 17 May 2018 (AM-II)

Rooms	Room #334	Room #335	Room #336
10:30am – 12:30pm	<p>TM-03: Efficient and Accurate Simulation of Multi-scale EMC & SI/PI (II)</p> <p>Chair(s): Shiquan He (Univ. of Electronic Science and Technology of China) Siping Gao (National Univ. of Singapore)</p>	<p>SS-05: Potential Electromagnetic Techniques for Booming Wireless Communications (IV)</p> <p>Chair(s): Han-Chang Hsieh (Bureau of Standards, Metrology & Inspection, Taiwan) Chow-Yen-Desmond Sim (Feng Chia Univ., Taiwan)</p>	<p>TM-04: EMC in Power Electronics and Smart Grid (III)</p> <p>Chair(s): Yanzhao Xie (Xi'an Jiaotong Univ., China) Junhong Deng (TUV SUD PSB Pte Ltd, Singapore)</p>
10:30am	<p>TH-AM-II-TM-03-1</p> <p>Research on Sparse Adaptive Beam-forming based on Non-Uniform Norm for Failure Elements (#10170)</p> <p>Peng Xu, Jiahui Qin, Hengxu Wang, Tao Jiang (Harbin Engineering Univ.)</p>	<p>TH-AM-II-SS-05-1</p> <p>A High-Gain Circularly-Polarized Patch Antenna Design Using an Advanced Shielding Technique (#8956)</p> <p>Cheng-Nan Chiu, Shao Po Sun, Yu-Chou Chuang, Tsung-Ching Lin (Yuan Ze Univ.), Han-Chang Hsieh (Bureau of Standards, Metrology and Inspection (BSMI) Ministry of Economic Affairs)</p>	<p>TH-AM-II-TM-04-1</p> <p>Non-ideal Electric Field Shielding with Grounding Resistor for Suppressing EMI Coupling in a Power Converter (#9852)</p> <p>Shize Ye, Xiaoyan Zheng, Zhichao Zheng (Zhejiang Univ.), Ji Xiao (State Grid Corp. of China), Henglin Chen (Zhejiang Univ.)</p>
10:50am	<p>TH-AM-II-TM-03-2</p> <p>The Associated Hermite FDTD Method: Developments and Applications (#10228)</p> <p>Zheng-Yu Huang (Nanjing Univ. of Aeronautics and Astronautics), Li-Hua Shi (Army Engineering Univ.)</p>	<p>TH-AM-II-SS-05-2</p> <p>Near- and Far-Field Shielding Effectiveness Analysis of Magnetic Materials and their Effect on Wireless Power Charger (#8971)</p> <p>Han-Nien Lin, Cheng-Hau Wu, Jen-Fu Huang, Wei-Ding Tseng (Feng Chia Univ.), Jeffrey (Yen-Ting) Lin (National Kaohsiung Univ.), Min-Shang Lin (Bureau of Standards, Metrology & Inspection, MOEA)</p>	<p>TH-AM-II-TM-04-2</p> <p>Numerical Approach to Study Layout Influence on Electromagnetic Emissions Signature (#9617)</p> <p>Wided Belloumi (University of Sousse and University of Lyon), Arnaud Breard (University of Lyon), Jaleleddine Ben Hadj Slama (Univ. of Sousse), Christian Voltaire (University of Lyon)</p>
11:10am	<p>TH-AM-II-TM-03-3</p> <p>Finite-Difference Time-Domain Method for Multilayer Carbon-Fiber-Reinforced Polymer Panel using Tensorial Conductivity Matrix (#9277)</p> <p>Zaifeng Yang, Hui Min Lee, Si-Ping Gao, Richard Xian-Ke Gao, Ching Eng Png (IHPC, A*STAR)</p>	<p>TH-AM-II-SS-05-3</p> <p>On Investigation of Near-field Antenna for Pulse-based Vital-sign Monitoring Application (#9374)</p> <p>Chia-Hung Chang (Feng Chia Univ.), Wei-Ping Hung (National Chao-Tung Univ.)</p>	<p>TH-AM-II-TM-04-3</p> <p>Overvoltage of Secondary Cables in Substation due to Short Circuit Fault (#10298)</p> <p>Yongchang Meng, Bo Zhang (Tsinghua Univ.), Wei Shen, Sen Wang (Shaanxi Electric Power Research Inst.), Yutang Ma (Yunnan Electric Power Research Inst.)</p>
11:30am	<p>TH-AM-II-TM-03-4</p> <p>Transient Analysis of Magnetic Balance Sensor with Field-Circuit Combined Simulation (#10267)</p> <p>Yongfu Liu, Shiquan He (Univ. of Electronic Science and Techno. of China), Juping Li, Li Cao (Ningbo CRRC Times Transducer Technique Co, Ltd)</p>	<p>TH-AM-II-SS-05-4</p> <p>Microwave Orbital Angular Momentum Mode Multiplexing Using Circular Slot Antenna (#10234)</p> <p>Zixiao Zhang, Liangqi Gui, Dandan Liu, Han Chen (Huazhong Univ. of Sci. and Techno.)</p>	<p>TH-AM-II-TM-04-4</p> <p>Automated Equivalent Circuit Extraction of Impedance Curves Using a Gauss-Newton Algorithm (#9873)</p> <p>Niek Moonen, Jesper Lansink Rotgerink, Frank Leferink (Univ. of Twente)</p>
11:50am	<p>TH-AM-II-TM-03-5</p> <p>Radiation Physics Analysis of High-speed Connectors with Sub-structure Characteristic Modes (#10268)</p> <p>Xu Wang, Shiquan He (Univ. of Electronic Science and Techno. of China), Ying S. Cao (Missouri Univ. of Science and Techno.)</p>	<p>TH-AM-II-SS-05-5</p> <p>Circular Sector Antenna Pair with Harmonic Rejection Property for Near-Field Wireless Power Transmission (#9027)</p> <p>Ding-bing Lin (National Taiwan Univ. of Sci. & Techno.^{#1}), Ifong Wu (National Inst. of Info. & Comm. Techno.), Ling Tien, Yi-Hao Huang^{#1}</p>	<p>TH-AM-II-TM-04-5</p> <p>Analysis of Conducted EMI in Si IGBT + SiC MOSFET Hybrid Switch Based Converters (#10383)</p> <p>Amol Deshpande, Balaji Narayanasamy, Fang Luo (Univ. of Arkansas)</p>
12:10pm	<p>TH-AM-II-TM-03-6</p> <p>A Measurement Verification for EMI Source Reconstruction Method Based on Amplitude-only Near-Field Scanning (#10311)</p> <p>Jing Zhou (Huawei), Yu-Fei Shu, Jun Li (Zhejiang Univ.), Nan Xia, Zheng-Dong Gu (Huawei), Xing-Chang Wei (Zhejiang Univ.)</p>	<p>TH-AM-II-SS-05-6</p> <p>Small-Sized, Printed 2.4/5-GHz WLAN Notebook Antenna Aimed for 4 x 4 Multiple Transmit / Receive Antennas in Future Gbps Communications (#9028)</p> <p>Saou-Wen Su, Bin-Chyi Tseng (ASUSTek Computer Inc.)</p>	<p>TH-AM-II-TM-04-6</p> <p>Experimental Analysis and Circuit Modeling of Pulsed Current Injection in Wire Pairs (#10329)</p> <p>Zithong Cui (Xidian Univ.), Flavia Grassi, Sergio Pignari (Politecnico di Milano), Bing Wei (Xidian Univ.)</p>

Technical Sessions – Thursday, 17 May 2018 (PM-I)

Rooms	Room #331	Room #332	Room #333
01:30pm – 03:30pm	<p>SS-02: Metamaterials/metasurfaces for Manipulations of Electromagnetic Waves</p> <p>Chair(s): He-Xiu Xu (Air Force Engineering Univ., China) Yongjun Huang (Univ. of Electronic Science and Technology of China)</p>	<p>SS-14: Radio Frequency Remote Sensing (Supported by IET Electromagnetics Technical and Professional Network)</p> <p>Chair(s): Julien Le Kervec (Univ. of Glasgow, UK) Alistair Duffy (De Montfort Univ. UK)</p>	<p>TC-02: EMC Measurement (III)</p> <p>Chair(s): Ed Hare (American Radio Relay League, USA) Zaifeng Yang (Inst. of High Performance Computing, A*STAR, Singapore)</p>
01:30pm	<p>TH-PM-I-SS-02-1 Verification and Crosstalk of Chirowaveguides (#10184) Zhihao Jiang (Southeast Univ.)</p>	<p>TH-PM-I-SS-14-1 Synthesis of Wide-band Radar Signals Using Multiple Subbands in Complex Noise Environment (#10324) Huapeng Zhao, Ying Zhang, Jun Hu (Univ. Of Electronic Science and Technology of China), Zhizhang Chen (Dalhousie Univ.)</p>	<p>TH-PM-I-TC-02-1 Extraction of Equivalent Impedance of Photovoltaic Panel under its Actual Operating Conditions (#9546) Manish Prajapati, Kye-Yak See (Nanyang Technological Univ.)</p>
01:50pm	<p>TH-PM-I-SS-02-2 Metalens in Microwave Region for the Generation of Orbital Angular Momentum (#9438) Kuang Zhang, Yueyi Yuan, Qun WU (Harbin Inst. of Technology)</p>	<p>TH-PM-I-SS-14-2 Analysis of the Impacts of Ionospheric Scintillation on Geosynchronous SAR Based on Spherical Wave Correction (#10202) Xichao Dong, Jiaqi Hu, Cheng Hu, Yuanhao Li, Dandan Zhang (Beijing Inst. of Technology)</p>	<p>TH-PM-I-TC-02-2 An Optimal Design of Printed Log-Periodic Antenna for L-band EMC Applications (#9666) Keyur Mistry, Pavlos Lazaridis (Univ. of Huddersfield^{#1}), Zaharias Zaharis, Thomas Xenos (Aristotle Univ. of Thessaloniki), Emmanouil Tziris (Brunel Univ.), Ian Glover^{#1}</p>
02:10pm	<p>TH-PM-I-SS-02-3 Broadband Wide-Angle Polarization-Independent Diffusion Using Parabolic-Phase Metasurface (#8733) He-Xiu Xu, Xiao-Kuan Zhang (Air Force Engineering Univ.), Xiaohui Ling, Lei Zhou (Fudan Univ.)</p>	<p>TH-PM-I-SS-14-3 Efficient Stochastic Analysis of Transmission Signal Integrity for Remote Sensing Applications (#10294) Zhouxiang Fei, Yi Huang, Jiafeng Zhou, Chaoyun Song, Tianyuan Jia (Univ. of Liverpool)</p>	<p>TH-PM-I-TC-02-3 WLAN MIMO Antennas for Smart Watch Applications (#9800) Ting-Yan Zhuo (Southern Taiwan Univ. of Science and Technology), Wen-Shan Chen (Southern Taiwan Univ. of Science and Technology), Chow-Yen-Desmond Sim (Feng Chia Univ.)</p>
02:30pm	<p>TH-PM-I-SS-02-4 Reflective Metasurface For Generating Vortex Wave in Ultra-Wideband (#9189) Xiaohang Dong, Hengyi Sun, Changqing Gu, Baijie Xu, Kuan Wang, Zhuo Li (Nanjing Univ. of Aeronautics and Astronautics)</p>	<p>TH-PM-I-SS-14-4 Wafer Level Heterogeneous Integration of a Millimeter-Wave Transceiver Module and its EMC Problems (#10155) Baolong Xu, Xin Yan, Cheng-rui Zhang, Xiao-long Huang, Liang Zhou, Jun-Fa Mao (Shanghai Jiaotong Univ.)</p>	<p>TH-PM-I-TC-02-4 Field Uniformity Improvement at Lower Frequencies in a Reverberation Chamber Using Metasurfaces (#9150) Jiajia Song, Zhuo Li, Hengyi Sun, Jianfeng Shi, Changqing Gu, Kuan Wang (Nanjing Univ. of Aeronautics and Astronautics)</p>
02:50pm	<p>TH-PM-I-SS-02-5 Metasurfaces for Specific Beams Generations (#10364) Jian Li, Yongjun Huang, Guangjun Wen (Univ. of Electronic Science and Technology of China)</p>	<p>TH-PM-I-SS-14-5 Aluminium Feeds for Reflector for NadirSAR (#10336) Derek Gray (Xi'an Jiaotong Liverpool Univ.), Julien Le Kervec (Univ. of Glasgow)</p>	<p>TH-PM-I-TC-02-5 The Future of Immunity Testing (#10060) Sangam Baligar, Flynn Lawrence (Amplifier Research Corp)</p>
03:10pm	<p>TH-PM-I-SS-02-6 Beam Scanning Range Expansion of Liquid Crystals Based Leaky Wave Antennas (#10160) Shuang Ma, Fan-Yi Meng, Guo-Hui Yang, Kuang Zhang, Xu-Ming Ding, Qun Wu (Harbin Inst. of Technology), Lei Zhu (Qiqihar University)</p>	<p>TH-PM-I-SS-14-6 The Role of FSV in EMC Characterization (#10444) Alistair Duffy (De Montfort Univ.), Gang Zhang (Harbin Inst. of Technology)</p>	<p>TH-PM-I-TC-02-6 New Standardized EMC Evaluation Methods for Communication Transceivers (#10289) Frank Klotz, Marlon Robl (Infineon Technologies AG), Bernd Korber, Norman Muller (WHZ Univ. of Applied Sciences)</p>

Technical Sessions – Thursday, 17 May 2018 (PM-I)

Rooms	Room #334	Room #335	Room #336
01:30pm – 03:30pm	TM-03: Efficient and Accurate Simulation of Multi-scale EMC & SI/PI (III) Chair(s): Huapeng Zhao (Univ. of Electronic Science and Technology of China) Xingchang Wei (Zhejiang Univ., China)	SS-06: Design and Modeling of Emerging EM Components and Devices (I) Chair(s): Zhixiang Huang (Anhui Univ., China) Min Hu (Univ. of Electronic Science and Technology of China)	TC-05: Electrostatic Discharge and Arcs Chair(s): William Radasky (Metatech Corporation, USA) Yoshihiro Baba (Doshisha Univ., Japan)
01:30pm	TH-PM-I-TM-03-1 Challenges of Multi-scale Modelling for System-level EMI Simulation (#10024) <i>Ming Zhou, Jing Li, Qinghai Wang, Yaojiang Zhang (Huawei), Xu Wang, Shiquan He (Univ. of Electronic Science and Technology of China)</i>	TH-PM-I-SS-06-1 A Horizontally Polarized Ominidirectional Millimeter Wave Microstrip Antenna with Miniaturized Dual-Bent-“S”-Shaped Structure (#9064) <i>Chao-Wei Yang, Shi Pu, Xiao-Ying Xu (Wuhan Univ. of Technology), Chen Wang (Altair Engineering Software)</i>	TH-PM-I-TC-05-1 A Simulation and Experimental Study of the Failure of an Internal Digital Clock due to ESD and its Mitigation (#9636) ★BEST EMC PAPER FINALIST★ <i>Pujitha Davuluri, Hao-Han Hsu, Min Keen Tang, Kae-An Liu (Intel Corporation)</i>
01:50pm	TH-PM-I-TM-03-2 A Statistical Equivalent Circuit Modelling based on Measured and De-embedded S-Parameters (#10322) <i>De-Cao Yang, Jing Zhou (Huawei), Shi Yao, Liang Gao (Zhejiang Univ.), Nan Xia, Zheng-Dong Gu (Huawei), Xing-Chang Wei (Zhejiang Univ.)</i>	TH-PM-I-SS-06-2 A Low-Profile Dual-Band-Pass FSS Applied to Wi-Fi Communication Systems (#9662) <i>Yun Jing Zhang, Mei Song Tong (Tongji Univ.)</i>	TH-PM-I-TC-05-2 A Study on Transient Current Distribution caused by Micro-gap ESD in Spherical Electrode. (#9978) <i>Masato Oikawa, Chihiro Okamura, Ken Kawamata, Shinobu Ishigami, Shigeki Minegishi (Tohoku Gakuin Univ.), Osamu Fujiwara (Nagoya Inst. of Technology)</i>
02:10pm	TH-PM-I-TM-03-3 Circuit Models for Bulk Current Injection (BCI) Clamps with Multiple Cables (#10338) <i>Bibhu Nayak, Arkaprov Das, Sreenivasulu Reddy Vedicherla (Indian Inst. of Science)</i>	TH-PM-I-SS-06-3 Analytical Modeling of SiC MOSFET during Switching Transient (#9843) <i>Yingzhe Wu, Hui Li, Chuan Li, Chuang Bi (Univ. of Electronic Science and Technology of China), Yongjian Zhi (CRRCC Zhuzhou Inst.), Weizheng Yao, Gang Liu (XUJI Group Corp.)</i>	TH-PM-I-TC-05-3 Efficient Analysis of ESD Noise Coupling to Mobile Device Memory Module (#9026) <i>Jawad Yousaf, Hosang Lee, Myeongkoo Park (Sungkyunkwan Univ.), Jinsung Youn, Daehee Lee, Chanseok Hwang (Samsung Electronics Co, Ltd), Wansoo Nah (Sungkyunkwan Univ.)</i>
02:30pm	TH-PM-I-TM-03-4 Impedance Calculation of Grid Power Distribution Network with Irregular Shapes (#8837) <i>Weiyang Ding (Zhejiang Univ.), Tie-Ming Xiang (Hangzhou Dianzi Univ.), Li Ding, Xing-Chang Wei (Zhejiang Univ.)</i>	TH-PM-I-SS-06-4 Broadband THz Generation from Plasmonic Metasurface (#9882) <i>Ming Fang, Zhixiang Huang, Xianliang Wu (Anhui Univeristy), Wei E. I. Sha (Zhejiang Univ.)</i>	TH-PM-I-TC-05-4 Time Domain Measurement of Collision ESD Using Optical E-Field Sensor (#10074) <i>Takayoshi Ohtsu, Norihiro Ogishima, Haruki Tashiro (National Inst. of Technology, Numazu College), Ryuji Osawa (Seikoh Giken Co., Ltd)</i>
02:50pm	TH-PM-I-TM-03-5 Analytical Intra-System EMI Model using Dipole Moments and Reciprocity (#9426) <i>Sangsu Lee (Ajou Univ.), Yang Zhong, Qiaolei Huang (Missouri S&T²¹), Takashi Enomoto, Shingo Seto, Kenji Araki (Sony Global Manu. & Operations Corp.), Jun Fan, Chulsoon Hwang^{#1}</i>	TH-PM-I-SS-06-5 Theoretical Calculation and Electromagnetic Simulation of Smith-Purcell in Photonic Crystals (#9930) <i>Xiaoqiuyan Zhang, Min Hu, Sen Gong, Zhenhua Wu, Yueheng Cao, Pengfei Hu, Shenggang Liu (Univ. of Electronic Science and Technology of China)</i>	TH-PM-I-TC-05-5 Analysis of Relationship between Arc Power and Radiated Electromagnetic Noise (#9165) <i>Shingo Shimizu, Shinji Ohoka (Soken, Inc.), Yoshihiro Adachi (Denso corp)</i>
03:10pm	TH-PM-I-TM-03-6 Simplification Technique for Modeling Electromagnetic Radiation of Shielding Cable Bundle (#8790) <i>Pei Xiao, Ping-An Du, Bao-Lin Nie (Univ. of Electronic Science and Technology of China)</i>	TH-PM-I-SS-06-6 Bended Differential Transmission Lines Using Asymmetric Stepped-Impedance Lines for Common-Mode Noise Suppression (#9971) <i>Hao-Jie Zhu, Jian Wang (Ningbo Univ.), Xiao-Yang Yin (National Univ. of Singapore)</i>	

Technical Sessions – Thursday, 17 May 2018 (PM-II)

Rooms	Room #331	Room #332	Room #333
	TC-10: SI/PI (VI)	TC-04: EMI/EMC	TC-01/02/03: EMC
03:50pm – 05:30pm	Chair(s): Er-Ping Li (Zhejiang Univ., China) Hui Min Lee (Institute of High Performance Computing, A*STAR, Singapore)	Chair(s): Cheng-Nan Chiu (Yuan Ze Univ., Taiwan) Wei-Jiang Zhao (Institute of High Performance Computing, A*STAR, Singapore)	Management, Measurement & Environment Chair(s): Frank Leferink (Univ. of Twente and THALES, Netherlands) Zhongxiang Shen (Nanyang Technological Univ., Singapore)
03:50pm	TH-PM-II-TC-10-1 Comparison Test and Error Analysis of the TEM Cell Method in IC Radiated Emission (#10290) Yafei Li (Tianjin Binhai Civil-military Integrated Innovation Inst.), Haiyan Ma (Shanghai Aerospace Electronic Technology Inst.), Jianfei Wu (National Univ. of Defense Technology), Hong Li, Hongli Zhang (Tianjin Binhai Civil-military Integrated Innovation Inst.)	TH-PM-II-TC-04-1 Antenna Calibration in Anechoic Chambers (30 MHz to 1 GHz) (#9205) Yujiro Seki (IPS Corporation), Atsushi Shinozaki (Minami-Shinshu Iida Industry Center), Masato Morooka (Tokin EMC Engineering Co., Ltd), Nobuhito Samoto (Samoto & Associates, Ltd), Kazuo Ogasawara (KEC Electronic Industry Development Center), Osami Wada (Kyoto University)	TH-PM-II-TC-01-1 Decision Rules for Metrological Confirmation of EMC Measurement Equipment (#8949) Carlo Carobbi (Univ. of Florence)
04:10pm	TH-PM-II-TC-10-2 Common Mode Conversion Noise Suppression using L-Pad with Asymmetric Coupled Lines on Bended Differential Lines (#9651) Seungjin Lee, Jaehyuk Lim, Sangyeol Oh, Jaehoon Lee (Korea Univ.), Yonghoon Kim, Dan Oh (Samsung Electronics, Inc.)	TH-PM-II-TC-04-2 A Susceptibility Assessment Method of High-Power Electromagnetic Effects Based on Gaussian Process Classification and Autoregressive Co-kriging Model (#9197) Yuhao Chen, Kejie Li (Xi'an Jiaotong Univ.), Shaoyan Gong (Global Energy Interconnection Research Inst.), Minzhou Liu, Yanzhao Xie (Xi'an Jiaotong Univ.)	TH-PM-II-TC-01-2 Teaching EMC using an EMC Demonstration Unit (#9492) ★BEST STUDENT PAPER FINALIST★ Andy Degraeve (KU Leuven, Bruges Campus), Joan Peuteman (KU Leuven, Bruges Campus), Davy Pissoort (KU Leuven, Bruges Campus), Keith Armstrong (Cherry Clough Consultants Ltd)
04:30pm	TH-PM-II-TC-10-3 Analysis of Electromagnetic Shielding of IC Package with Thin Absorbing Material Coating inside in Two Different Configurations (#8778) Wentao Xiong (Shenzhen Univ.), Mei Jiang (Shenzhen Univ.), Mingcheng Zhu (Shenzhen Univ.), Boyuan Zhu (Griffith Univ.), Junwei Lu (Griffith Univ.)	TH-PM-II-TC-04-3 Observation of Electromagnetic Noise from LED Shadowless Lights (#9658) Kai Ishida (National Inst. of Information and Communications Technology), Tomoe Yoshida (Kitasato Univ.), Sazu Arie (National Inst. of Information and Communications Technology), Masaki Matsuzuki (Mie Univ. Hospital), Eisuke Hanada (Saga Univ. Graduate School of Science and Engineering), Minoru Hirose (Kitasato Univ.)	TH-PM-II-TC-02-1 Non-contact Monitoring Method for Overvoltage Based on Pockels Effect (#9087) Jun Deng, Hai Qian, Jinwei Chu, Zhiliang Lu, Liang Zhang, Zhicheng Xie, Zhilong Zou (Extra-High Voltage Transmission Company of China Southern Power Grid)
04:50pm	TH-PM-II-TC-10-4 A Novel BG-Triggered ggNMOS Structure for FD-SOI ESD Protection (#9450) Lizhong Zhang, Yuan Wang, Xiaotian Chen, Yandong He, Ru Huang (Peking Univ.)	TH-PM-II-TC-04-4 An Analytical Approach for DC-Link DM Filter Design for PM AC Motor Drives (#9380) Dragan Micic (Woodward Inc)	TH-PM-II-TC-03-1 Safety Aspects of LTE Wearable Antenna (#9962) Haim Matzner (HIT-Holon Inst. of Technology), Ely Levine, Shimon Kahlon (Afeka college of Engineering)
05:10pm	TH-PM-II-TC-10-5 Improved Topology of DC Capacitors for Differential Mode Noise Mitigation in Inverter (#9561) ★BEST STUDENT PAPER FINALIST★ Ousseynou Yade, Arnaud Breard, Christian Martin, Christian Vollaire (Université de Lyon), Regis Meuret (Labinal Power Systems), Marwan Ali (Université de Lyon)	TH-PM-II-TC-04-5 Relay Switching at Zero-Crossing Point of Grid Voltage to Eliminate the EFT Interference (#9478) Minchao Huang (Minye Information Technology (Shanghai) Co., Ltd.), Zhenghua Gu (R&D Dept. Zettler China Xiamen), Qingsheng Zeng (Shanxi University), Xia Xiao (R&D Dept. Zettler China Xiamen)	TH-PM-II-TC-03-2 Fields and Current Densities Induced in the Human Body by Low-frequency Electromagnetic Fields (#9038) Patricio E. Munhoz-Rojas, Cresencio Silvio Segura-Salas, Alexandre A. Costa (Institutos Lactec), Rafael Martins, Josef Hoffmann-Neto (COPEL G&T)

Technical Sessions – Thursday, 17 May 2018 (PM-II)

Rooms	Room #334	Room #335	Room #336
03:50pm – 05:30pm	<p>TM-03: Efficient and Accurate Simulation of Multi-scale EMC & SI/PI (IV)</p> <p>Chair(s): Xingchang Wei (Zhejiang Univ., China) Chao-Fu Wang (National Univ. of Singapore)</p>	<p>SS-06: Design and Modeling of Emerging EM Components and Devices (II)</p> <p>Chair(s): Zhixiang Huang (Anhui Univ., China) Min Hu (Univ. of Electronic Science and Technology of China)</p>	<p>TC-07: Low Frequency EMC</p> <p>Chair(s): Petre-Marian Nicolae (Univ. of Craiova, Romania), Flavia Grassi (Politecnico di Milano, Italy)</p>
03:50pm	<p>TH-PM-II-TM-03-1</p> <p>Electromagnetic Interference Investigation of PCB in Metallic Enclosures Using ADI-FDTD Method (#9576)</p> <p>Liang Chen, Min Tang, Junfa Mao (Shanghai Jiao Tong Univ.)</p>	<p>TH-PM-II-SS-06-1</p> <p>An Integrated UHF/UWB Tag Antenna with Radome for Indoor Positioning System (#10057)</p> <p>Da Li, Zhongxiang Shen, Er-Ping Li (Zhejiang Univ.)</p>	<p>TH-PM-II-TC-07-1</p> <p>Extraction of Voltage-Dependent Capacitances of SiC Device through Inductive Coupling Method (#8886) ★BEST EMC PAPER FINALIST★</p> <p>★BEST STUDENT PAPER FINALIST★</p> <p>Zhenyu Zhao, Kye-Yak See, Eng-Kee Chua, Arun Shankar Narayanan, Arjuna Weerasinghe (Nanyang Technological Univ.), Wayne Chen (SMRT Corporation Ltd.)</p>
04:10pm	<p>TH-PM-II-TM-03-2</p> <p>Exploration of Characteristic Mode Theory for Electromagnetic Compatibility Modeling (#9431)</p> <p>Sai Ho Yeung, Chao-Fu Wang (National Univ. of Singapore)</p>	<p>TH-PM-II-SS-06-2</p> <p>Microwave Plasmonic Waveguides and Devices (#10266)</p> <p>Hui Feng Ma, Meng Wang, Hao Chi Zhang (Southeast Univ.)</p>	<p>TH-PM-II-TC-07-2</p> <p>Influence of Mutual Coupling on Parasitic Capacitance in Common Mode Chokes (#8893)</p> <p>Niek Moonen (Univ. of Twente), Anne Roc'h (Eindhoven Univ. of Technology), Frank Leferink (Univ. of Twente and THALES, Netherlands)</p>
04:30pm	<p>TH-PM-II-TM-03-3</p> <p>Study on EMC of Backplane Interconnect System Based on Interference Correlation (#9469)</p> <p>Aixin Chen (Beihang Univ., Li Wang (Beihang Univ.), Wenbin Wu (Beijing Inst. of Aerospace Microsystems)</p>	<p>TH-PM-II-SS-06-3</p> <p>Frequency Dependent Capacitance of Metal Semiconductor Metal Varactor Diode and its Tunable Filter Application (#9363)</p> <p>Chien-Fu Shih, Liann-Be Chang, Der-Hwa Yeh, Tung-Wuu Huang (Chang Gung Univ.)</p>	<p>TH-PM-II-TC-07-3</p> <p>Analytical Calculation of Transformer Parameters by S-Parameters (#9355)</p> <p>Jianquan Lou, Alpesh Bhobe, Yingchun Shu, Jinghan Yu (Cisco Systems (China) R&D Co., Ltd.)</p>
04:50pm	<p>TH-PM-II-TM-03-4</p> <p>Efficient Inductive Coupled In-circuit Impedance Extraction with Enhanced SNR and Instrument Protection (#9527)</p> <p>Fei Fan, Kye-Yak SEE, Kangrong Li, Joseph Kiran Banda (Nanyang Technological Univ.), Xiong Liu, Amit Kumar Gupta (Rolls-Royce Singapore Pte. Ltd.)</p>	<p>TH-PM-II-SS-06-4</p> <p>A Compact Antenna for UWB Indoor Positioning (#10077)</p> <p>Binfang Wang, Wei-Jiang Zhao (Inst. of High Performance Computing)</p>	<p>TH-PM-II-TC-07-4</p> <p>Modeling and Simulation of Switching Characteristics of Half-Bridge SiC Power Module in Single Leg T-type Converter for EMI Prediction (#9387)</p> <p>Yong Liu, Kye-Yak See, Zhenyu Zhou (Nanyang Technological Univ.), Rejeki Simanjorang (Applied Technology Group, Rolls-Royce Singapore), Ziyou Lim, Zhenyu Zhao (Nanyang Technological Univ.)</p>
05:10pm			<p>TH-PM-II-TC-07-5</p> <p>About the Immunity of the Equipment used to Monitor the Units of Power Transformers (#9379)</p> <p>Petre-Marian Nicolae, Ileana-Diana Nicolae (Univ. of Craiova), Dumitru Sacerdotianu (ICMET)</p>

Experiment & Demonstration Sessions

Experiment and Demonstration Session I – Tuesday Afternoon, 15 May 2018

15 May 2018, Tuesday 3:00-5:00pm

Venue: Exhibition Hall

Time Domain Site VSWR Measurements

Presenter(s): Zhong Chen, ETS-Lindgren, USA

Abstract:

This demonstration shows the time domain measurement process of obtaining the site VSWR as called out in CISPR for test site validation. A vector network analyzer is used to obtain the S21 response between two antennas. The data is transformed to time domain via inverse FFT. The reflections from the environment can be separated from the direct antenna responses due to time delays. After time gating and FFT, the reflection coefficient, consequently the VSWR of the test site (or chamber) - as a function of frequency can be derived. The demonstration shows the effectiveness of the measurement process, the data post-processing, and analysis of the results. Time domain site VSWR is post-processed through statistical techniques, and data is shown to correlate to the CISPR method. Note this demonstration provides an example of this measurement technique that is described in the new draft ANSI C63.25 standard for test site validation.

Enhancing the Switchboard to Meet the EMC for Railway Applications

Presenter(s): ER Lim Say Leong, IEC Committee, Singapore Standards Council, SPRING Singapore and Consumers Association of Singapore

Abstract:

1. Demonstration of correct cable installation method in LV Switchboard in compliance to conducted immunity (CISPR16) – segregation to eliminate interference from cable which conducts high noise interference (using variable speed drive output cable high noise emission).
2. Simulation of magnetic field interference from high current flow in power distribution board; demonstration of the switchboard construction to contain the power frequency magnetic field emission (EN61000-4-8).

Experiment and Demonstration Session II – Wednesday Morning, 16 May 2018

16 May 2018, Wednesday 8:30-10:30am

Venue: Exhibition Hall

EMC Simulation for Early Stage Analysis and Troubleshooting of DC-DC Converter Conducted Emissions

*Presenter(s): Patrick Deroy, CST, USA
Mike Cheong, Rohde & Schwarz, Singapore
Martin Leung, CST, Singapore*

Abstract:

In modern electronic applications a majority of devices utilize switched AC/DC or DC/DC converters in their power networks. The power provided from a source, is switched by the converter in order to adjust the output voltage level (Switch Mode Power Supply - SMPS). Unfortunately, the switching always creates noise, which may be significant at higher frequencies. Furthermore, this unwanted emission can upset the source or any other device in the same supply power network, because it is easily transmitted through the power lines.

In this E&D, we'll demonstrate how to simulate conducted emissions and how EMI filtering can help suppress this. The simulation model and results will be compared directly to live measurement of the physical hardware sample.

With coupled 3D EM field and circuit co-simulation, early stage analysis can be performed before a prototype of the device is manufactured. The subject of this demonstration is a typical bulk step-down DC/DC converter. The effect of the PCB layout will also be shown and discussed.

Experiment and Demonstration Session III– Wednesday Afternoon, 16 May 2018**16 May 2018, Wednesday 12:00-2:00pm****Venue: Exhibition Hall****Efficient Testing Using a Reverberation Chamber – with “Real Time” Examples***Presenter(s): Garth D’Abreu, RF Design, ETS-Lindgren, Cedar Park, Texas, USA***Abstract:**

Reverberation chambers were once primarily used for military and automotive testing. Today, reverberation chambers are increasingly used for new, diverse test applications due to their inherent efficiency and cost effectiveness. Examples include using reverberation chambers for aircraft testing, to simulate a wireless environment, for determining shielding effectiveness, and to calibrate devices such as antennas and probes. This demonstration will begin with an overview of reverberation chambers, provide a comparison of frequency stirring versus mechanical stirring, and conclude with a review of the most commonly used current test applications. After this presentation, a demonstration of popular test applications will be conducted using an actual, working reverberation chamber to provide “real time” examples of the material presented.

Smart Trick to Debug Burst EMI Noise in Conducted Emission Due to Common Mode Filter Saturation*Presenter(s): Joel Sumarago and Michael Daan, Lexmark Research and Development Corporation, Philippines***Abstract:**

Optimizing design and performance of common mode choke relative to its stability due to current loading, temperature dependence and flux density operation to improve a conducted emission problem in a switch mode power supply. The conducted emission problem which was caused by a localized saturation of its common mode choke due to differential current attributed by imbalanced leakage inductance and coupled with common mode signal asymmetry. Utilizing readily available laboratory test equipment such as EMI receiver with IF out, Oscilloscope and a DIY current probe.

Experiment and Demonstration Session IV – Wednesday Afternoon, 16 May 2018**16 May 2018, Wednesday 3:00-5:00pm****Venue: Exhibition Hall****EMI Troubleshooting & Pre-Compliance Testing – Step-By-Step***Presenter(s): Kenneth Wyatt, Wyatt Technical Services LLC, USA; Christopher Loberg, Tektronix, USA***Abstract:**

EMI Troubleshooting (Wyatt, 15 min) - As a consultant, I frequently run into clients that have worked for weeks or months to beat down a radiated emissions problem by repeatedly cycling between their R&D lab and third-party compliance test lab, while trying various fixes. This is very frustrating for both the designers and their management. I’ve developed a simple three-step process comprising some very quick and simple tests, that will help you can identify failures, narrow down the root cause, and try various fixes well before submitting the product for full compliance testing. The three step troubleshooting process will be demonstrated.

EMI Pre-Compliance Testing (Loberg, 15 min) - While investing in your own full in-house EMC test laboratory may seem difficult to justify, most companies should be able to afford some level of pre-compliance testing capability. Outside compliance test labs can cost upwards of \$2,000 per day. The advantage of being able to perform some of the key tests in-house is that you can quickly determine whether your product is anywhere close to passing. The ability to perform these tests in-house without an expensive anechoic chamber can be accomplished through careful removal of ambient noise. Identifying “red flags” or problem areas early allows more cost-effective implementation of fixes. Waiting until the end of a product development cycle to determine EMC compliance is always very risky and usually expensive in time and money. A simple pre-compliance test setup and measurement will be demonstrated for radiated emissions.

Surveilling EFT in Micro-Controlled Circuits*Presenter(s): Peter Michak, Langer EMV-Technik GmbH, Germany***Abstract:**

If your device fails the required EMC test, there usually is no explanation why and how. Therefore, it is difficult to find a solution to pass. In this demonstration we will show different methods to understand the EMC effects on the DUT. The participant will learn how to follow disturbance current paths, localizing weak spots and interpreting the measured results.

APEMC'18 Distinguished Invited Speakers

Bruce Archambeault



Dr. Bruce Archambeault is an IEEE Fellow, an IBM Distinguished Engineer Emeritus and an Adjunct Professor at Missouri University of Science and Technology. He received his Ph. D. from the University of New Hampshire in 1997. His doctoral research was in the area of computational electromagnetics applied to real-world EMC problems. He has taught numerous seminars on EMC and Signal Integrity across the USA and the world, including the past 15 years at Oxford University.

Dr. Archambeault has authored or co-authored a number of papers in computational electromagnetics, mostly applied to real-world EMC applications. He currently serves as the President of the EMC Society. He is the author of the book "PCB Design for Real-World EMI Control" and the lead author of the book titled "EMI/EMC Computational Modeling Handbook".

Sonia Delmas Ben Dhia



Sonia Delmas Ben Dhia (sonia.bendhia@insa-toulouse.com)

Full professor at INSA-Toulouse (French engineering institute) since 2000, Department of Electrical and Computer Engineering, I teach analog & digital electronics, IC testability & reliability, and analog & RF CMOS design.

CEO of INSA Euro-Méditerranée, Fès, Morocco (2014-2017), I was responsible for the overall leadership and management of this new engineering institute. This includes curriculum development, student recruitment, staff and student development, research leadership as well as national and international professional and academic linkages.

My research interests at LAAS – CNRS laboratory in Toulouse include signal integrity in nano-scale CMOS ICs, electromagnetic compatibility and reliability of ICs, and more recently energy harvesting. I have authored and co-authored 3 books, more than 100 publications in peer-reviewed journals & conference proceedings and supervised 13 PhD theses and 8 M.Sc. theses.

Administrative responsibilities

INSA Euro-Méditerranée (Morocco): From creation to Direction

2014 - 2017 CEO of INSA EM (Engineering institute of technology)

INSA Toulouse

2013 to 15 Foundation Director
 2010 to 15 Industrial Partnership Director
 2010 to 15 Governing board member
 2005 to 10 Project Officer at the board of directors for engineering studies
 2005 to 10 Educational Development board member

Research

2012 to 14 LAAS CNRS Education & Research commission member
 2011 to 14 National working group GDR ONDES 2451 member
 2009 to 11 Responsible of EMC Research team of LATTIS Laboratory

Research Topics: Electromagnetic Compatibility, Robustness and reliability

Research coordination:

Nov 2017: Launch of new research activity on « Energy Harvesting for Internet of Things »
 2015 to 21: LAAS Scientific coordinator for National project ANR – ROBUSTNES & FELINE
 2012 to 15: LAAS Scientific coordinator for FP7 – AUTOMICS
 2009 to 11: LATTIS EMC team coordinator,
 • Scientific strategy, project definitions
 • Financial aspects (applying for funding, projects, industrial contacts)
 • Team coordination: 3 assoc. prof., 1 ASI, 3 PhD, 2 Master students
 • Dissemination

Since 2007: Development and launch of new research activity « Long term Electromagnetic robustness »
 (400 k€ from ANR JC, R&T CNES, regional council)

2002 to 05 : Scientific Coordinator for European project ALFA II « LABDILEIT »
 2001 to 03 : Scientific Coordinator for EADS CCR, European project LIMA (part time job)

Scientific coordination:

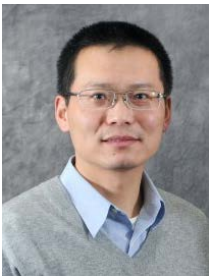
Organizing committee:

- Scientific Chair «EMC compo 09», Toulouse
- Tutorials Chair « EMC compo 11 », Dubrovnik
- Public Relations Chair « SPI 2013 », Paris
- General Chair « Surveillance 9 », 2017 Fès

Organization of Special sessions in EMC international conferences: annually

Awards

- Silver award innovation contest regional council (1998)
- 1st young researcher price INSA-Transfer (1999)
- 1st student prize IMAPS France (1999)
- 1st student prize IMAPS Europe (1999)
- Highly com. award, MCB Univ. Press (2000)
- 3 Best paper awards: EMC Compo (2005, 2013, 2016)

Jun Fan

Jun Fan (S'97-M'00-SM'06-F'16) received his B.S. and M.S. degrees in Electrical Engineering from Tsinghua University, Beijing, China, in 1994 and 1997, respectively. He received his Ph.D. degree in Electrical Engineering from the University of Missouri-Rolla in 2000. From 2000 to 2007, he worked for NCR Corporation, San Diego, CA, as a Consultant Engineer. In July 2007, he joined the Missouri University of Science and Technology (formerly University of Missouri-Rolla), and is currently a Professor and Director of the Missouri S&T EMC Laboratory. Dr. Fan also serves as the Director of the National Science Foundation (NSF) Industry/University Cooperative Research Center (I/UCRC) for Electromagnetic Compatibility and Senior Investigator of Missouri S&T Material Research Center. His research interests include signal integrity and EMI

designs in high-speed digital systems, dc power-bus modeling, intra-system EMI and RF interference, PCB noise reduction, differential signaling, and cable/connector designs. In the IEEE EMC Society, Dr. Fan served as the Chair of the TC-9 Computational Electromagnetics Committee from 2006 to 2008, the Chair of the Technical Advisory Committee from 2014 to 2016, and a Distinguished Lecturer in 2007 and 2008. He currently is an associate editor for the IEEE Transactions on Electromagnetic Compatibility and IEEE EMC Magazine. Dr. Fan received an IEEE EMC Society Technical Achievement Award in August 2009.

Frank Leferink

Frank Leferink received his B.Sc in 1984, M.Sc. in 1992 and his PhD in 2001, all electrical engineering, at the University of Twente, Enschede, The Netherlands. He has been with THALES in Hengelo, The Netherlands since 1984 and is now the Technical Authority EMC. He is also manager of the Network of Excellence on EMC of the THALES Group. This Network of Excellence promotes collaboration between more than 100 EMC engineers scattered over more than 30 units, worldwide, and with at 15 sites EMC laboratories.

In 2003 he was appointed as (part-time, full research) professor, Chair for EMC at the University of Twente. At the University of Twente he lectures the courses Transmission Media, and EMC, and manages several externally funded research projects, with 1 researcher and 8 PhD student-researchers. Over 300 papers have been published at international conferences or peer reviewed journals. He holds patents on reverberation chambers, on preventing interference in radars, and on protecting rotating installations against the effects of direct lightning.

Prof. dr. Leferink is past-president of the Dutch EMC-ESD association, Chair of the IEEE EMC Benelux Chapter, member of ISC EMC Europe, Chairman of EMC Europe 2018 in Amsterdam, member of the Board of Directors of the IEEE EMC Society, and associate editor of the IEEE Transactions on Electromagnetic Compatibility and the IEEE Journal on Electromagnetic Compatibility Practice and Applications (JEMCPA).

Sergio A. Pignari



Sergio A. PIGNARI
IEEE Fellow

Politecnico di Milano

Dept. of Electronics, Information and Bioengineering (DEIB), Italy

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Sergio A. Pignari (M'01–SM'07–F'12) received the *Laurea* (M.S.) and Ph.D. degrees in electronic engineering from Politecnico di Torino, Turin, Italy, in 1988 and 1993, respectively.

From 1991 to 1998, he was an Assistant Professor with the Dept. of Electronics, Politecnico di Torino, Turin, Italy. In 1998, he joined Politecnico di Milano, Milan, Italy, where he is currently a Full Professor of Circuit Theory and Electromagnetic Compatibility (EMC) at the Dept. of Electronics, Information, and Bioengineering, and Chair of the B.Sc. and M.Sc. Study Programmes in Electrical Engineering, term 2015-20. He is the author or coauthor of more than 200 papers published in international journals and conference proceedings. His research interests are in the field of EMC and include field-to-wire coupling and crosstalk, conducted immunity and emissions in multi-wire structures, statistical techniques for EMC, and experimental procedures and setups for EMC testing. His research activity is mainly related to Aerospace, Automotive, Energy, and Railway industry sectors.

Dr. Pignari is a recipient of the 2005 and 2016 IEEE EMC Society Transactions Prize Paper Award, and a 2011 IEEE EMC Society Technical Achievement Award. He is currently serving as an Associate Editor of the IEEE TRANSACTIONS ON ELECTROMAGNETIC COMPATIBILITY. From 2010 to 2015 he served as the IEEE EMC Society Chapter Coordinator. From 2007 to 2009 he was the Chair of the IEEE Italy Section EMC Society Chapter. He has been Technical Program Chair of the ESA Workshop on Aerospace EMC in 2009, 2012, and 2016, Technical Program Chair of EMC' Beijing in 2017, and a Member of the Technical Program Committee of the Asia Pacific EMC Week since 2010. He is currently serving as the Italian URSI Officer for Commission E (Electromagnetic Noise and Interference), term 2015-18.

Dr. Pignari is Rector's Delegate for POLIMI-XJTU Joint School of Design & Innovation Centre Project, and a member of the International Academic Committee of The State Key Laboratory of Electrical Insulation and Power Equipment (SKLEIPE) at Xi'an Jiaotong University (XJTU), Xi'an, China, term 2015-20.

Farhad Rachidi



Farhad Rachidi (M'93–SM'02–F'10) received the M.S. degree in electrical engineering and the Ph.D. degree from the Swiss Federal Institute of Technology, Lausanne, Switzerland, in 1986 and 1991, respectively. He was with the Power Systems Laboratory, Swiss Federal Institute of Technology, until 1996. In 1997, he joined the Lightning Research Laboratory, University of Toronto, Toronto, ON, Canada. From 1998 to 1999, he was with Montena EMC, Rossens, Switzerland. He is currently a Titular Professor and the Head of the EMC Laboratory with the Swiss Federal Institute of Technology, Lausanne, Switzerland. He has authored or co-authored over 180 scientific papers published in peer-reviewed journals and over 380 papers presented at international conferences.

Dr. Rachidi is currently a member of the Advisory Board of the IEEE TRANSACTIONS ON ELECTROMAGNETIC COMPATIBILITY and the President of the Swiss National Committee of the International Union of Radio Science. He has received numerous awards including the 2005 IEEE EMC Technical Achievement Award, the 2005 CIGRE Technical Committee Award, the 2006 Blondel Medal from the French Association of Electrical Engineering, Electronics, Information Technology and Communication (SEE), the 2016 Berger Award from the International Conference on Lightning Protection, the 2016 Best Paper Award of the IEEE Transactions on EMC, and the 2017 Motohisa Kanda Award for the most cited paper of the IEEE Transactions on EMC. In 2014, he was conferred the title of Honorary Professor of the Xi'an Jiaotong University in China. He served as the Vice-Chair of the European COST Action on the Physics of Lightning Flash and its Effects from 2005 to 2009, the Chairman of the 2008 European Electromagnetics International Symposium, the President of the International Conference on Lightning Protection from 2008 to 2014, the Editor-in-Chief of the Open Atmospheric Science Journal (2010-2012) and the Editor-in-Chief of the IEEE TRANSACTIONS ON ELECTROMAGNETIC COMPATIBILITY from 2013 to 2015. He is a Fellow of the IEEE and of the SUMMA Foundation, and a member of the Swiss Academy of Sciences.

William Radasky



Dr. William A. Radasky, Ph.D., P.E., IEEE Life Fellow, Lord Kelvin Awardee

William Radasky began his scientific and engineering career in 1968 at the Air Force Weapons Laboratory (AFWL) in Albuquerque, New Mexico as an Air Force Officer. He worked with the early high-altitude electromagnetic pulse (HEMP) codes, which calculate the HEMP environments on the ground due to a nuclear burst at high altitudes.

From 1972 through 1975, he worked for Mission Research Corporation (MRC) in Albuquerque, New Mexico and subsequently in Santa Barbara, California. He worked on a variety of EMP phenomenology, system assessment and protection projects dealing with nuclear bursts at all altitudes, and with different military systems.

After consulting from 1975-1977, he joined JAYCOR in 1977 as a Division Vice President, opening and managing the Santa Barbara office, he continued his work advancing the state of the art of all types of EMP phenomenology and systems applications. He led standardization efforts to define the high-altitude EMP environment waveforms for aircraft and other DoD applications. In addition he developed the current injection levels for time-urgent C4I systems (MIL-STD-188-125-1 and -2).

In 1984, Dr. Radasky founded a new company, Metatech Corporation, in Goleta, California (Santa Barbara County) where he is President and Managing Engineer. At Metatech, Dr. Radasky continued his EMP work protecting military systems, but also began his work in protecting the critical infrastructures from a range of severe EM environments. This included new work to determine the effects of severe geomagnetic storms on power systems, the effects on Intentional EMI (IEMI) on the critical infrastructures, and the non-linear behavior of grounding systems to high-level lightning strokes. In addition, he has spent substantial efforts volunteering his time for standardization bodies such as the IEC, the IEEE and Cigré to make high-power EM protection part of the discipline of EMC. He also contributed to the U.S. Congressional EMP Commission work from 2001-2008 and in 2017, as a Senior Staff member.

Dr. Radasky has most recently been involved in the development of commercial electromagnetic compatibility (EMC) standards with the International Electrotechnical Commission (IEC) in Geneva, Switzerland to protect commercial systems from all types of electromagnetic threats, including those from the high-altitude electromagnetic pulse (HEMP) and high-power electromagnetic (EM) weapons, which create intentional electromagnetic interference (IEMI). He has served as Chairman of SC 77C, "EMC: High Power Transient Phenomena," beginning when the subcommittee was established in 1992 until 2016. In October 2004, Dr. Radasky was awarded the Lord Kelvin Medal in Seoul, South Korea by the IEC for exceptional service in the development of international standards.

Dr. Radasky is a registered Professional Engineer in Electrical Engineering in the State of California and is a Life Fellow of the IEEE participating in the EMC, the Power and Energy (PES) and the Antennas and Propagation (APS) Societies. He is also a member of the Tau Beta Pi and Eta Kappa Nu honor societies, and he was selected as an EMP Fellow in 1988. He has published over 500 company and government reports, conference papers and popular press articles. He is the holder of two best paper awards in 1973 (NEM) and 1984 (HEART Conference). He served as the guest editor for the August 2004 IEEE EMC Transactions Special Issue on Intentional EMI (IEMI) and High Power EM (HPEM). He was also the guest editor for the June 2013 IEEE EMC Transactions Special Issue on High-altitude Electromagnetic Pulse (HEMP). Dr. Radasky is the Past Chairman of IEC SC 77C (served for 25 years) and also serves as the Chairman of TC 5 (High-Power Electromagnetics) for the IEEE EMC Society. He was awarded the Carl E. Baum Medal by the Summa Foundation in 2017.

Frank Sabath



Dr. Frank Sabath (M'94-SM'04) received the Dipl.-Ing. Degree in electrical engineering from the University of Paderborn, Paderborn, Germany, in 1993, and the Dr.-Ing. degree from the Leibniz University of Hannover, Hannover, Germany, in 1998.

From 1993 to 1998, he was with the C-Lab, a Joint Research and Development Institute of the University of Paderborn and the Siemens Nixdorf Informationssysteme AG, Paderborn, Germany, where his responsibilities included research activities on numerical field calculation and the radiation analysis of printed circuit boards. Since 1998, he has been with the Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support (BAAINBw). From 2011 to 2017 he was head of the directorate on Nuclear Effects, High-

Power Electromagnetics and Fire Protection of the Bundeswehr Research Institute for Protective Technologies and CBRN-Protection (WIS), Munster, Germany. In 2017 he took over responsibility as head of the directorate on Detection. He is the author or coauthor of more than 150 papers published in international journals and conference proceedings (orcid.org/0000-0001-6702-3715). His research interests include investigations of electromagnetic field theory, High-Power Electromagnetics, investigations of short pulse interaction on electronics, and impulse radiation and electromagnetic interferences risk management.

Dr. Sabath served as Ultra Wide Band (UWB) co-chairman of the EUROEM 2004, Magdeburg, Germany as well of the EUROEM 2008, Lausanne, Switzerland. He also serves on the International Steering Committee (ISC) of the EMC Europe conference. Currently he is the president of the IEEE EMC Society, an Associate Editor of the IEEE Transactions on EMC, and Associate Editor of the EMC Magazine. Due to his outstanding service the EMC Society presented him the Laurence G. Cumming Award in 2009 and the Honored Member Award in 2012. He is the Immediate Past President of the IEEE Electromagnetic Compatibility (EMC) Society, and a member of Antennas and Propagation (AP), Microwaves Theory and Techniques (MTT) societies, and of URSI Commission E.

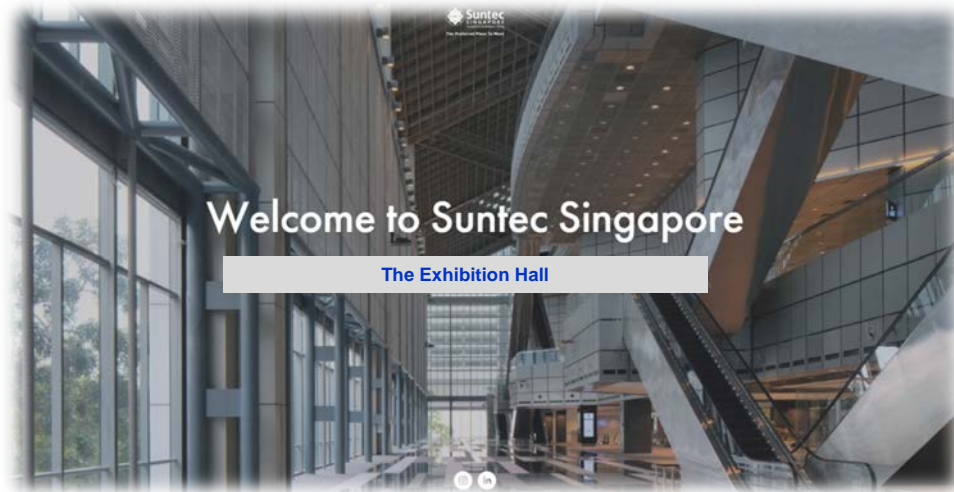
Tzong-Lin Wu



Tzong-Lin Wu, received the B.S.E.E. and Ph.D. degrees from National Taiwan University (NTU), in 1991 and 1995, respectively. From 1995 to 1996, Tzong-Lin was a Senior Engineer at Micro-electronics Technology Inc., in Hsinchu, Taiwan. In 1996, after receiving his Ph.D. degree, he joined the Central Research Institute of the Tatung Company, Taipei, Taiwan, where he was involved in the analysis and measurement of electromagnetic compatibility/electromagnetic interference (EMC/EMI) problems of high-speed digital systems. In 1998, he decided in favor of an academic career and accepted a position at the Electrical Engineering Department, National Sun Yat-Sen University. Since 2006, he has been a Professor in the Department of Electrical Engineering and Graduate Institute of Communication Engineering (GICE), NTU. In

Summer 2008, he was a Visiting Professor with the Electrical Engineering Department, University of California at Los Angeles (UCLA). His research interests include EMC/EMI and signal/power integrity design for high-speed digital/optical systems. Tzong-Lin was appointed as the Director of the GICE and Communication Research Center in NTU in 2012.

Tzong-Lin received the Excellent Research Award and the Excellent Advisor Award from National Sun Yat-Sen University in 2000 and 2003, respectively, the Outstanding Young Engineers Award from the Chinese Institute of Electrical Engineers in 2002, and the Wu Ta-You Memorial Award from the National Science Council (NSC) in 2005, Outstanding Research Award from NSC in 2011, 2014, and 2017. the IEEE Transactions on Advanced Packaging Best Paper Award in 2011, Outstanding Research Innovation Award from NTU in 2013, Outstanding Technology Transfer Contribution Award from NSC in 2013, 2014 Outstanding Teaching Award in NTU (top 1%), and 2015 IEEE EMC Society Motohisa Kanda Award for a IEEE T-EMC paper with highest citation for those published papers in past 5 years. He has served as the Chair of the Institute of Electronics, Information and Communication Engineers (IEICE) Taipei Section in 2007-2011, the Treasurer of the IEEE Taipei Section in 2007-2008. He was a member of the Board of Directors of the IEEE Taipei Section in 2009-2010 and 2013-2018, and the member of Board of Directors (BoD) of IEEE EMC Society in 2016-2020. He served the IEEE EMC Society as a Distinguished Lecturer for the period 2008–2009. He was Co-Chair of the 2007 IEEE Electrical Design of Advanced Packaging and Systems (EDAPS) workshop, General Chair of the 2015 Asia Pacific EMC Symposium (APEMC), and Technical Program Chair of the 2010 and 2012 IEEE EDAPS Symposiums. He is now the Associate Editor of IEEE Transactions on EMC and IEEE Transactions on CPMT, and the Editor-in-Chief of International Journal of Electrical Engineering (IJEE). Dr. Wu is IEEE Fellow.



Technical Exhibitions

Operations/Event Schedule

Exhibitor Move-In : 14 May 2018 Monday, 1400 hrs onwards

Exhibition Dates & Time : 15 - 16 May 9:00am – 5:30pm
17 May 9:00am – 5:00pm

Exhibitor Badges Collection: Exhibitor badges can be collected from the registration counter at the entrance of Exhibition Hall on 14 May 2018 between 1400hrs to 1700hrs

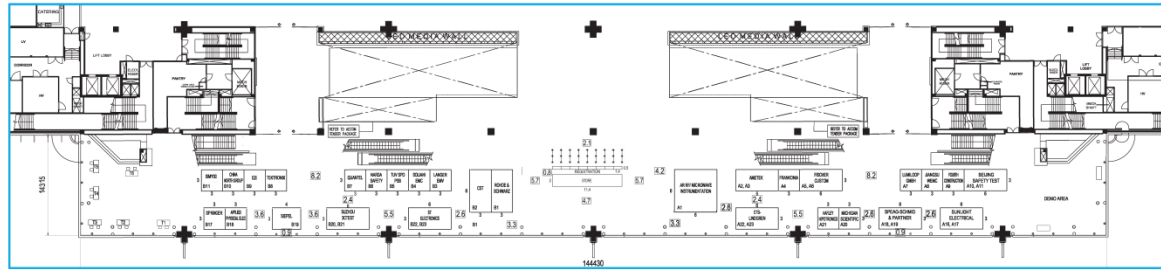
Exhibitor Move-Out : 17 May 2018, Thursday, 1700 hrs onwards

List of Exhibitors

SN	Company name	Booth No.
1	Ametek Singapore Pte Ltd	A2 & A3
2	Applied Physical Electronics (APELC)	B18
3	AR RF/Microwave Instrumentation	A1
4	Beijing Safety Test Technology Co., Ltd (STT)	A10 & A11
5	CST - Computer Simulation Technology GmbH	B2
6	E2I	B9
7	ETS-LINDGREN	A22 & A23
8	Fischer Custom Communications Inc	A5 & A6
9	Frankonia Germany EMC Solutions GmbH	A4
10	Haefely Hipotronics	A21
11	Institute of Electromagnetic Technology of NORENDAR International Ltd	B10
12	Jiangsu WEMC Technology Co., LTD	A8
13	Langer EMV-Technik GmbH	B3
14	LUMILOOP GmbH	A7
15	Michigan Scientific Corporation	A20
16	Narda Safety Test Solutions (PMM)	B6
17	Quantel Pte Ltd	B7
18	Rohde & Schwarz Asia Pte Ltd	B1
19	Siepel	B19
20	SimYog Pvt. Ltd.	B11
21	Soliani EMC s.r.l	B4
22	SPEAG-Schmid & Partner Engineering AG	A18 & A19
23	Springer (A part of Springer Nature)	B17
24	ST Electronics (Info-comm Systems) Pte Ltd	B22 & B23
25	Sunlight Engineering Pte Ltd	A16 & A17
26	Suzhou 3ctest Electronic Co. Ltd	B20 & B21
27	Tektronix Southeast Asia Pte Ltd	B8
28	The Fourth Construction Co. Ltd of China Electronics System Engineering	A9
29	TUV SPD PSB Pte Ltd	B5
30	IEEE EMC Society, USA	T1
31	iNARTE	T2
32	EMC Society of Australia	T3
33	Safety & EMC	T4
34	IET, UK	T5
	IEICE CS Japan	T6

Note: A/B - Booth; T - Table Top.

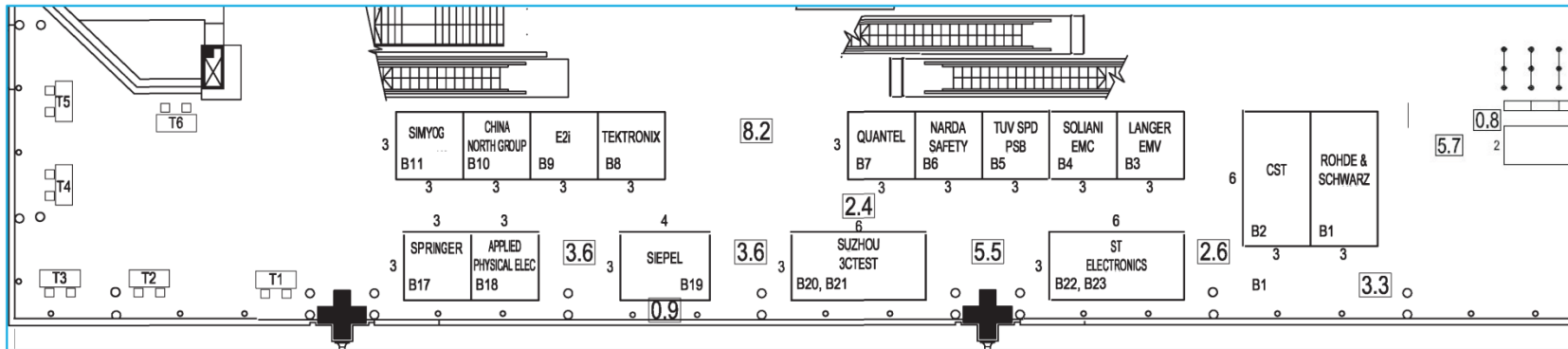
Exhibition Layout



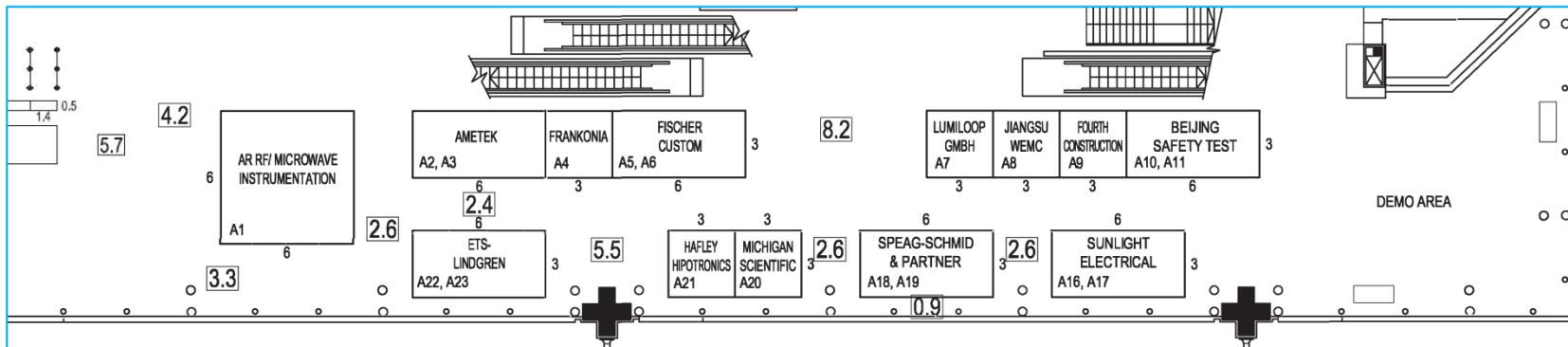
Region B

Region A

Region B (Zoom-in)



Region A (Zoom-in)



About the Exhibitors



AMETEK Compliance Test Solutions (CTS)

Booth No.: A2 & A3

AMETEK Compliance Test Solutions (CTS) is a leading provider of test and measurement instrumentation solutions for electromagnetic compatibility (EMC) testing, with manufacturing sites in Switzerland, Germany, the United Kingdom and the United States and a worldwide sales and service network. The product portfolio comprises testing systems for conducted and radiated disturbances as well as amplifiers in the RF and microwave range. AMETEK CTS is uniquely positioned to serve the EMC community. Under AMETEK CTS, the renowned EMC and RF product brands - EM TEST, TESEQ, MILMEGA and IFI - are united into a single global business offering innovative customer solutions and services to almost all industries.

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APELC

Applied Physical Electronics L.C.

Applied Physical Electronics L.C. (APELC)

Booth No.: B18

Since 1998, Applied Physical Electronics L.C. (APELC) has focused on the research and development of compact deployable Marx generators. Our novel designs have produced output pulses with ultrafast rise times, moderate pulse widths, and amplitudes ranging from kilovolts to megavolts. APELC develops Marx generator-based systems to support RF test and evaluation efforts, as well as electronic-defeat applications, such as non-lethal vehicle and boat stopping systems.

In addition, APELC offers complete EMP simulators and current-injection test systems that abide by the latest MIL-STD and IEC requirements. APELC also offers trigger-pulse generators, solid-state Marx generators, coaxial high-voltage connectors, and other accessories for high-power electronics.

What makes APELC different is its closed-loop development process. We work closely with our customers to address their evolving needs and timelines. Our development process then leverages our advanced CNC machine shop, high-speed-diagnostic test range, and multi-disciplined engineering team to quickly flow a prototype through design, fabrication, testing, and re-design. With these processes occurring in-house, APELC can rapidly mature technologies and quickly adapt to our customer needs.

Contact Person: Matt Lara
URL: www.apelc.com



AR RF/Microwave Instrumentation

Booth No.: A1

AR RF/Microwave Instrumentation manufactures and distributes products for various EMC and wireless telecommunication requirements:

- RF Solid State Amplifiers 1 to 50,000 watts, dc to 1 GHz
- Microwave Amplifiers 1 to 10,000 watts, 0.7 to 50 GHz
- Microwave Solid State Pulse Amplifiers - 1,000 to 150,000 watts, 1-4 GHz
- Antennas Up to 15,000 watts input power, 10 kHz to 50 GHz
- RF Conducted Immunity Test Systems
- EMC/RF Test Systems
- Hybrid Power Modules
- Power Measuring Equipment
- Laser field probes and field analyzers
- Accessories and Software
- Electromagnetic Safety Products
- SunAR RF Motion Positioning Equipment, reverberation stirrers and Distributed Antenna Systems (DAS)

Contact Person: Mike Alferman

URL: www.arworld.us



Beijing Safety Test Technology Co., Ltd. (STT)

Booth No.: A10 & A11

Beijing Safety Test Technology Co., Ltd. (STT), was founded in 2002, has been providing the customer with advanced, reliable, standards-compliant products and services for over 16 years in electromagnetic testing industry.

As one of the leading companies in electromagnetic testing industry in China, our core business includes: R & D, Production and Sales of electromagnetic field testing instruments (EMF Safety Meters series) and electromagnetic interference testing instruments (EMI Receivers) and providing electromagnetic field detection services.

The instruments of STT include:

- SEM-600 EMF Meter
- OS EMF Online Monitoring System
- HDEM High-voltage DC Test System
- Optical Waveguide EMF System
- EMI Receiver and LISN
- Power Amplifier
- EMF Testing System for Space Array carried on UAV

Our customers emerge in environmental protection, communications, power, home appliances, homeland security, and military industries.

With STT rich export experience in the industry, STT is certain that we will offer ALL-in-ONE solutions to meet the customers' requirements.

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Contact Person: Mr. DEJIAN LU

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CST – Computer Simulation Technology GmbH

Booth No.: B2

CST is a market leader in providing 3D electromagnetic (EM) field simulation tools through a global network of sales and support staff and representatives. CST develops CST EMC STUDIO, a package of high-performance software for the simulation of EM fields in all frequency bands. Its growing success is based on a combination of leading edge technology, a user-friendly interface and knowledgeable support staff. CST solutions are used by market leaders in a diverse range of industries, including aerospace, automotive, defense, electronics, healthcare and telecommunications. CST is part of SIMULIA, a Dassault Systèmes brand. Further information about CST is available on the web at www.cst.com.

Contact Person: Martin Leung
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E2I

Booth No.: B9

e2i (Employment and Employability Institute) is the empowering network for individuals and companies seeking skills and solutions for growth. Since 2008, e2i has assisted more than 600,000 individuals through our career guidance, professional development, and job matching services. With an extensive network of partners, e2i offers hiring, training and productivity solutions to businesses. We are an initiative of the National Trades Union Congress (NTUC) to support nation-wide manpower and skills upgrading initiatives. For more information, please visit www.e2i.com.sg.

Contact: e2i.com.sg/contact-an-industry-specialist/
URL: www.e2i.com.sg



ETS-LINDGREN

Booth No.: A22 & A23

ETS-LINDGREN is a leader in the design and manufacture of systems and components for EMC/EMI, RF/Microwave and MIMO/OTA test and measurement applications. Our solutions are used globally to meet many industry standards. ETS-Lindgren's patents have resulted in numerous industry milestones, including the world's first CTIA Authorized Test Lab (CATL) and the first oversize RF shielded sliding door for full vehicle test chambers, to name a few. Our full line of EMP/EMI products is the first to have been independently tested and certified. ETS-Lindgren provides turnkey capabilities, including Building Information Modeling (BIM), all related instrumentation, and user-friendly software - TILE!™ for automated EMC testing and EMQuest™ for antenna pattern measurement. Our newest software, VisionTRX™, features automated, movement based visual monitoring with manual failure alert triggering. This complete system approach facilitates project completion schedules and ensures all components work together seamlessly. ETS-Lindgren's services provided include antenna/probe calibration at our A2LA accredited lab and chamber

retrofits where we replace older absorber in existing chambers with new absorber to dramatically improve performance and increase the interior footprint. With over 800 dedicated employees worldwide and manufacturing facilities located in North America, Europe and Asia, ETS-Lindgren is your global resource for superior test and measurement solutions.

Contact Person: Ms Jenny See Toh
Tel: +65 9799 2272
URL: www.ets-lindgren.com



Fischer Custom Communications, Inc.
Booth No.: A5 & A6

Since 1971, Fischer Custom Communications, Inc., has pioneered the development of state of the art EMC test and measurement equipment: current monitor probes, bulk current injection probes, CDN's and LISN. Many of our products meet CISPR 15, CISPR 25, CISPR 32, DO-160, IEC 61000-4-6, Mil Std 461 requirements. Our calibration laboratory is accredited to ISO/IEC 17025.

Contact Person: Allen Fischer
URL: www.fischercc.com



Frankonia Germany EMC Solutions GmbH
Booth No.: A4

Founded 1987, Frankonia is a solution provider for EMC laboratories, meeting the increasing demand for highly specialized testing environments for the electronic and automotive industry.

Without limitations in its capabilities, Frankonia develops future-oriented concepts for our complete product range, which guarantee the optimal use of resources, as well as the best possible solutions.

Within our Anechoic Chamber business that includes a wide range of standardized chambers from pre-compliance up to full compliance and customized chambers.

We offer a variety of innovative positioning devices and accessories required in modern testing facilities like antenna mast, turntables, doors and gates, and our unique absorber technology Frankosorb®.

Contact Person: Dr. Daniel Feyerlein
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URL: www.frankoniagroup.com

HAEFELY HIPOTRONICS

HAEFELY HIPOTRONICS

Booth No.: A21

At HAEFELY HIPOTRONICS we believe that access to safe and reliable power is not just a privilege, but a right. By providing innovative and dependable test and measurement solutions to our customers around the world, we help make this dream a reality. HAEFELY HIPOTRONICS, as a subsidiary of Hubbell Incorporated (HUBB), employs over 260 people worldwide and hold numerous U.S. and international patents. With production areas in both the United States and Switzerland, we bring 110 years of combined history and experience to our work focusing on total quality.

Contact Person: Mr Jon Nguyen
URL: www.haefely-hipotronics.com



北方工程设计研究院有限公司
NORENDAR INTERNATIONAL LTD.

NORENDAR International Ltd.

Booth No.: B10

NORENDAR International Ltd. is a comprehensive design institute of the People's Republic of China. Over the years, more than 400 products of different specifications and uses have been designed and built for the central government, the military, local government agencies, factories, and schools. It has won many awards for excellent design, excellent engineering and scientific progress, and has participated in many international science projects like the Square Kilometer Array Project.

Service Content:

- Design and construction of privacy shielding rooms, test shielding rooms, shielding reverberation rooms, nuclear magnetic resonance protection rooms, electromagnetic shielding vehicles, shielding shelters, shielding tables and cabinets, building electromagnetic protection, magnetic shielding and so on.
- Design and build a variety of chambers, far/near field measurement microwave chamber, simulation chamber, electromagnetic compatibility (EMC) test room, anti-electromagnetic pulse (EMP) chamber and so on.
- Design and provide various darkroom test system integration.
- Design and manufacture various types of non-standard equipment such as test turntable antenna lifts.

It has built a standard "3m method" electromagnetic compatibility test laboratory which can provide relevant electromagnetic and magnetic compatibility tests.

Contact Person: Xinye Qi
URL: www.norendar.cn



Jiangsu WEMC Technology Co., LTD.

Booth No.: A8

Jiangsu WEMC Technology Co., Ltd. is a high-tech enterprise specialized in researching, developing and manufacturing of EMC and information safeguard products.

Contact Person: Youliang Wei

URL: www.wemctech.com/



Langer EMV-Technik

Booth No.: B3

Langer EMV-Technik is in the forefront of research, development, and production in the field of EMC. Through EMC experimental seminars and EMC workshops we offer our comprehensive knowledge to our customers.

Our interference emission and interference immunity EMC measurement technology as well as the IC test system are used mainly in the development stage and are in worldwide demand.

Developers and designers gain new perspectives and more efficient working strategies for module- and IC developments with the EMC know how and measurement technology of Langer EMV-Technik GmbH.

The individual pre-compliance consulting services provided by Langer EMV-Technik GmbH help developers and designers quickly find solutions to complex EMC problems in IC, device, and module development.

We make both our comprehensive EMC expertise and research results available to our customers via practical experimental EMC seminars and in-house events.

Contact Person: Mr. Peter Michak

Email: michak@langer-emv.de

URL: langer-emv.de



LUMILOOP GmbH

Booth No.: A7

The LUMILOOP GmbH is a manufacturer of optically powered measurement devices. Power-over-fiber meets the challenges for electromagnetically sensitive environments, particularly for long-term, maintenance-free applications. It can deliver uninterrupted power and continuous high-speed data communication for remote sensor applications. The patented technology results in reliable, secure and laser safe systems.

LUMILOOP's laser-powered E-field probes combined with LUMILOOP's power meters offer a significant reduction in measurement time for electromagnetic susceptibility testing. The LSProbe 1.2 combines the applicability of an oscilloscope with an easy-to-handle optically powered E-field probe. For the frequency range of 10 Hz to 8.2 GHz the LSProbe 1.2 delivers best-in-class dynamic range (Min. 80 to Max. 110 dB, typically 95 dB) for electric field strengths from below 0.1 V/m to over 10 kV/m. The miniaturized system enables pulse detection from pulse width of 1 μ s on all three axes simultaneously. Continuous streaming of 500,000 samples per second and optional bursts of 2,000,000 samples per second provide precise timing and characteristics of the electric field strength. Extensive frequency and temperature compensation data is supplied for each probe. Especially for IEC 61000-4-3/ISO 11451-2 and IEC 61000-4-21/ ISO 11452-11 for reverberation chambers, a synchronously measuring multi-probe system is available.

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Michigan Scientific Corporation (MSC)

Booth No.: A20

Michigan Scientific Corporation (MSC) is a leading manufacturer of Fiber-Optic Systems with high RF immunity. Engineered to form dependable signal links to/from equipment under test during automotive component and full-scale vehicle EMC testing, our products continue to earn a reputation of unmatched stability and immunity. We exceed customer expectations with reliable products and services, technical acumen, continual improvement, quality standard, and superior customer service.

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Narda Safety Test Solutions (PMM)

Booth No.: B6

PMM is the Italian brand of NARDA Safety Test Solutions, belonging to L3 Technologies Group, specialized in RF testing instruments for EMI and EMS applications.

Present in the EMC market since more than 30 years, PMM applied a revolutionary approach to EMI testing with its innovative and extremely compact Digital and FFT based Receivers 9010 Series: still "the smallest" CISPR 16-1-1 Full-Compliant EMI Receivers in the market!

Such innovation was even enhanced with the introduction of the High Frequency Modules (up to 18 GHz) connectable directly to the measuring antennas and communicating with the mainframe through a "fiber-optic cable", thus lowering losses and measurement uncertainty at the lowest possible extent.

Always operating beside manufacturers and test laboratories, PMM-NARDA has developed a whole range of EMI Receivers and Accessories perfectly matching every practical requirement.

Very unique are also the Field Probes of EP-60x Series, the smallest isotropic probes ever designed, to complete the range of cost-effective solutions for Immunity Testing PMM-NARDA can provide for Industrial and Automotive applications.

PMM-NARDA Italy does always keep strict control on the whole HW and SW design processes, what

assures the best possible quality and support to end-users.

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Quantel Pte Ltd

Booth No.: B7

Quantel Pte Ltd, incorporated in Singapore 29 years' ago, is a premium solution provider for EMC immunity and emission, both conducted and radiated. With 12 branches span across South East Asia and India, our sales and support teams are right at the factory door steps to understand and serve your design and compliance needs for EMC. This time round, three of our top of the lines brands, EMCIS, PMM and 3ctest, will showcase their latest innovations. First we have EMCIS, sophisticated EMI Analyzer for noise analysis & separation in common-mode and differential-mode, real EUT impedance finding, components (coil & capacitor) performance evaluation and trial EMI filter design. PMM will provide us the opportunity to be up close with their next revolution digital lighting fast time domain EMI Receiver. Another new introduction from PMM is – the Rod Antenna with a CISPR Receiver “ON BOARD”. Last of all 3ctest third generation intelligent compact immunity tester, Electrostatic discharge simulator, Surge simulator, EFT/Burst simulator, Voltage dip simulator, Power Frequency Magnetic Field Simulator, Automotive EMC test system, etc, with international advanced levels. So look out for our booth!

Contact Person: Ong Eng Tat

URL: www.quantel-global.com



ROHDE & SCHWARZ

Rohde & Schwarz Asia Pte Ltd

Booth No.: B1

The Rohde & Schwarz technology group develops, produces and markets innovative information and communications technology products for professional users. Rohde & Schwarz focuses on test and measurement, broadcast and media, cybersecurity, secure communications and monitoring and network testing, areas that address many different industry and government-sector market segments. Founded more than 80 years ago, the independent company has an extensive sales and service network in more than 70 countries. The company is headquartered in Munich, Germany, and also has regional hubs in Asia and the USA.

Rohde & Schwarz commemorated its 20th year of presence in Singapore in August 2017. Our Singapore story began in 1997 with a humble team of six and today, we have a full-fledged global hub employing some 450 staff. The past two decades of corporate expansion and business growth were built upon strong commitment of our staff and close partnerships with key stakeholders in top management, fellow subsidiaries, government agencies and industry players. With Singapore as our strategic hub, we will continue to bring innovation, service, manufacturing and supply chain closer to our customers.

Contact Person: Rachel Xie, Ng Teng

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SIEPEL

Booth No.: B19

Created in 1986, SIEPEL is an independent French company specialised in the engineering, manufacturing and installation of a wide range of electromagnetic absorbers and anechoic chambers for EMC. Especially, SIEPEL provides:

- Absorbers: pyramidal, high power, truncated, ferrites, and hybrid.
- Mode stirred reverberation chambers & associated software (any applicable standard)
- High performances shielding components: doors, honeycomb air vents, filters, ...
- Anechoic chambers: design or turnkey, high-quality standard and tailor-made solutions

Our technical solutions are developed for challenging fields such as space, aeronautics, defence, automotive, industry or radio/telecom. That is why they are compliant with numerous standards such as EN/ISO/CISPR/MIL-STD/ANSI/IEEE/ETSI/DO.

For these applications, we perform accredited anechoic chamber measurements according to ISO/IEC 17025:2005 (accreditation n° 1-6220, scope available at www.cofrac.fr).

Our team will be glad to welcome you during APEMC 2018 in order to exchange and provide you more details about our activity. Also, in the meantime, do not hesitate to contact our Asian representative office at sales.asia@siepel.com.

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SOLIANI EMC s.r.l.

Booth No.: B4

SOLIANI EMC is a company base on Lake Como, Italy which is manufacturer of EMC EMI TEMPEST AND HEMP and EMP solution manufacturing from the raw material to the finish product. SOLIANI EMC is NATO qualified and manufactures EMI conductive fabric, EMC gaskets, EMC windows, EMC silicones, EMC RTV, EMC CHAMBER and EMC TENTS. We do offer a catalogue product but we are also able to supply customize solution in a short delivery time.

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SPEAG-Schmid & Partner Engineering AG

Booth No.: A18 & A19

SPEAG is the leading developer and manufacturer of advanced and reliable test equipment for the evaluation of electromagnetic (EM) fields. Our smart products and high-performance probes are user-friendly and designed for precise measurements in a wide range of applications ≤ 110 GHz, covering the latest 5G technologies. Key products: DASY6 – Compliant SAR measurement; cSAR3D – FastSAR testing; ICEy – Automatic near field scanning (EMI/EMC); DAK – Dielectric measurement systems; EM Phantoms – Body simulants for RF testing; SEMCAD X - EM design optimization by simulations.

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Springer (A part of Springer Nature)
Booth No.: B17

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ST Electronics (Info-comm Systems) Pte Ltd
Booth No.: B22 & B23

ST Electronics offers a comprehensive range of tests and consultancy services for all electromagnetic environments including defence, commercial, rail and automotive applications. Leveraging many years of experience in this field, our team has accumulated a strong foundation in all aspects of EMC from both technical and commercial perspectives. We have the experiences and deep expertise to conduct product testing that adheres to military specifications, EMC directives or any international EMC standards.

A good product design that adheres to EMC guidelines ensures that it is in compliance with international standards. This will help customers to significantly reduce product design cycles and unnecessary costs to achieve earlier time-to-market benefits. Apart from product design, our team also provides the following services and solutions:

- Comprehensive and cost-effective control and test plans for large-scale projects involving integration of multiple systems
- A complete simulation system for identifying and assessment of radio frequency interference and radiation hazards for personnel, ordnance and fuels
- Development of EMC control plan and EMC test plan for electronic system integration
- Product and system EMC design and technical evaluation of COTS items
- Product ruggedisation against hostile EM environment
- EMI impact assessment
- Radiation hazards assessment (HERP, HERO, HERF)
- Radiation hazard (HERP, HERO, HERF) zones predication
- Radio frequency interference analysis

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SUNLIGHT

A CHNT COMPANY

Sunlight Engineering Pte Ltd

Booth No.: A16 & A17

40 years ago, Sunlight was a humble electrical contractor. Today, with immense support from partners, customers and loyal staff, Sunlight celebrates 40 years of relentless growth and the birth of its pristine, state-of-the-art new building.

The headquarters cum factory sits over an 85,000 square feet facility at No. 1, Third Chin Bee Road.

It represents not only a persistent passion for greater things to come, but a commitment, to partners and investors alike, to continue its spirit for innovation and improvement to product designs and testing standards.

A leading manufacturer of power distribution products to date, this distinction can only ignite Sunlight's drive to become one of the best in Singapore, if not the world.

Sunlight draws upon the latest technology and expertise of renowned brands such as ABB, HAGER, Schneider Electric, Siemens, Mitsubishi, amongst many others, with one key focus in mind – To increase production and efficiency to meet and exceed customers' needs and expectations.

Contact Person: Benson Lim
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Suzhou 3ctest Electronic Co., Ltd.

Booth No.: B20 & B21

Suzhou 3ctest Electronic Co., Ltd. was established in 2004 and located in Suzhou, China, devoting to EMC and Complicated Electromagnetic Environment with scientific research, design, manufacture, sales and service.

We adhere to independent innovation, constantly updating new technology. We have a R&D team with rich experiences and professional technology background. Our Standard Research Center participates in the draft and execution of more than twenty GB standards related EMC and 2 books published. Every year, many EMC technical seminars are held to make efforts to push EMC technology widespread application.

Set up offices in Beijing, Shenzhen, Chengdu and Xi'an to provide customers with professional and meticulous service, strive to build first-class products, creating world brand. After ten year's development and precipitation, we have more than 5000 customers in the field of lightning protection and EMC test which are widely used in electric power system, household electrical appliances, consumer electronics, automotive electronics, communications, security monitoring, LED lighting, medical equipment, New energy, avionics and military departments, and other enterprises. Our products have been exported to Europe, United States, South East Asia, South Korea, Australia, Taiwan, etc. In EMC industry, 3ctest has been one of the largest scale and the most influencing professional manufacturer.

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Tektronix

Booth No.: B8

We have been there from the early days of electronics. We've continued to lead the way in the fast-evolving digital, mobile, and connected age. Today, we're empowering engineers to create and realize innovation with ever greater ease, speed and accuracy.

As digital technologies become more complex to design, and yet more essential to everyday life, measurement plays an increasingly vital role. And the demands are growing.

Our customers gain competitive advantage when essential measurement insight is more accessible and effective. At Tektronix we are compelled to innovate on behalf of these customers – creating pathways to new solutions.

Beyond technically-advanced, precise instruments, we bring a proven track record of domain and application expertise. By actively sharing this expertise with our customers, we create collaborative innovation – a powerful alignment that harnesses new ideas and increases velocity toward the digital future.

Our culture is defined by problem solvers who embrace this spirit of discovery – people with vision, ambition and ideas. Together with our customers, we have the potential to advance human understanding, happiness, productivity, security, health and sustainability.

At the leading edge of engineering, Tektronix will break down the barriers between inspiration and the realization of world-changing technologies.

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The Fourth Construction Co., Ltd. of China Electronics System Engineering

Booth No.: A9

The Fourth Construction Co., Ltd. of China Electronics System Engineering (Hereinafter referred to as CEFOC or the company) , founded originally in 1953 successively as a subsidiary of the First Machinery Ministry, the Third Machinery Ministry and Electronics Industry Ministry, is one of the earliest engineering installation companies in China engaged in the construction of national key projects. In 2003, CEFOC was integrally transformed & named as "The Fourth Construction Co., Ltd. of China Electronics System Engineering (CEFOC)". The company is now the membership company of China Electronics Corporation (CEC). CEFOC has 3 major offices locating in Shijiazhuang, Beijing, Shanghai and 10 smaller offices across the country. Projects involved by CEFOC locate all over China of 29 provinces, municipality and autonomous regions.

For EMC, the company has advanced technology, rich experience and strong manufacturing & construction forces.

Targeting at the 1st class engineering company, with the value of "Professional, Credible, Harmonious and Diligent." and business philosophy of "Respecting the Client and Providing Good Service", CEFOC adheres to the customers as the focus and proposes quality goals of "strengthening service consciousness, pursuing clients' satisfaction; creating excellent projects, observing social responsibility", and "clients' satisfaction rate of 100%, zero complaint on engineering quality"

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TUV SPD PSB Pte Ltd

Booth No.: B5

TÜV SÜD is a premium quality, safety, and sustainability solutions provider that specialises in testing, inspection, auditing, certification, training, and knowledge services. Since 1866, the company has remained committed to its founding principle of protecting people, property and the environment from technology-related risks. Headquartered in Munich, Germany, TÜV SÜD is represented in more than 1000 locations worldwide. TÜV SÜD operates globally with a team of more than 24,000 multi-disciplinary experts recognised as specialists in their respective fields. By combining impartial expertise with invaluable insights, the company adds tangible value to businesses, consumers and the environment. The aim of TÜV SÜD is to support customers with a comprehensive suite of services worldwide to increase efficiency, reduce costs and manage risk.

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SimYog Pvt. Ltd.

Booth No.: B11

Simyog's vision is a harmonious integration of physical science and data science to enable cost-effective and performance rich automotive electronic design through early stage failure detection, saving bill-of-materials and reducing time-to-market.

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安全与电磁兼容 **SAFETY & EMC**

Booth No.: T4

SAFETY & EMC magazine started the first publication from twenty-nine years ago, it is the unique official publication (CN 11-3452/TM, ISSN 1005-9776) synthetically introducing the safety and EMC technology of electronic and electric industry at present in China, which is supervised by Ministry of Industry and Information Technology of PRC and sponsored by China Electronic Standardization Institute (CESI).

SAFETY & EMC is a bimonthly publication with a cohesive, innovative and professional workforce. In 2008, it started its English edition yearly, and erected the bridge for international academic communication. Until now, its readers are more 500'000. Most of them are engineers, teachers and students; however, there are a lot of marketing and purchasing personnel becoming its faithful readers.

SAFETY & EMC is with a deep core of understanding of this industry, its column arrangement is subject to

professional and technical features, for instance, Certification & Marks, Standard & Application, Testing & Measurement, Electromagnetic Interference Suppression Technology, Material Application in EMC, Professional Research, EMC Classroom, Conference Release, New Products, Company Profile and so on. This magazine promptly publishes the relative policies, laws and regulations of governmental administrations. It plays a good guiding role in raising the safety and EMC performance and in the import and export trade of electronic and electric products.

E-mail: xiehong@cesi.cn



IEEE EMC Society
Booth No.: T1

The IEEE Electromagnetic Compatibility Society is the world's largest organization dedicated to the development and distribution of information, tools and techniques for reducing electromagnetic interference.

The society's field of interest includes standards, measurement techniques and test procedures, instrumentation, equipment and systems characteristics, interference control techniques and components, education, computational analysis, and spectrum management, along with scientific, technical, industrial, professional or other activities that contribute to this field.

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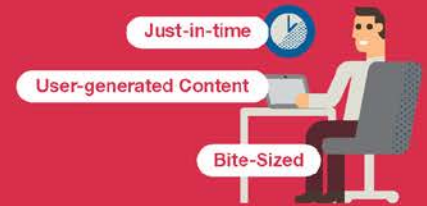


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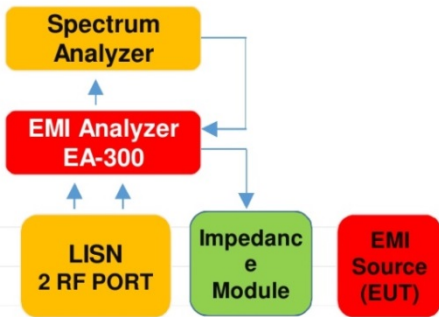
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Electromagnetic Compatibility (EMC) Forum

The Electromagnetic Compatibility (EMC) Forum is a dedicated platform created by the EMC people, for the EMC people. This big family of Electromagnetic Compatibility Forum (EMC-F) consists of thousands of renowned EMC experts and scholars, professors and students, EMC practitioners and engineers, EMC educators and trainers.

The EMC-F is a place where like-minded people are speaking the same language of EMC; talking about latest EMC technologies, R&D results, products, and services; exchanging and disseminating EMC knowledge and information, and so on.

We come together in this EMC-F as a big family, where we respect one another; we may at times disagree with one another about what is said about EMC, but we will defend to the death one another's right to say it properly.

As the organizers of the EMC-F, we are striving to provide you with timely, valuable, and relevant EMC technologies and information, so as to continuously improve your user experience as an EMC-F member. We believe in sharing with mutual benefiting for all in the EMC community. We cherish existing EMC-F members and we also warmly welcome anyone who is interested in EMC and related areas to join us.

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International Symposium on
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TOWARDS A ZERO DOWNTIME RAIL TRANSPORTATION

Following the successes of past conferences held in Beijing (2013) and Birmingham (2016), the 2018 International Conference on Intelligent Rail Transportation (IEEE ICIRT 2018) will be held in Singapore. The Conference programme includes tutorials and workshops on 12 December and keynotes and paper presentations on 13-14 December.

Globally, many cities are rapidly developing and expanding their rail infrastructures, and Reliability and Resiliency are key challenges in urban rail transportation. To address these challenges, the theme for ICIRT 2018 is “Towards a Zero Downtime Rail Transportation”. While zero downtime is not obtainable literally, it should not preclude us from striving to be so. ICIRT 2018 aims to provide a platform for all rail transportation engineers and researchers to share good design practices and R&D outcomes with the objective to work towards this goal. We invite submission of papers on the following topics related to intelligent rail transportation but not limited to:

- Traffic management and train control
- System modelling and simulation
- System optimisation
- Transportation planning and timetabling
- Condition monitoring
- Vehicle dynamics and control
- Capacity analysis
- Privacy and security
- System automation
- Non-destructive testing
- Data modelling and integration
- Communication technology
- Railway infrastructure
- Intelligent rail transport
- Energy modelling & management
- Human factors
- Failure analyses
- Digital rail systems

All accepted papers will be included in IEEE Xplore.

Important Dates:

Paper Submissions : **5 June 2018**
Notification of Acceptance : **14 August 2018**
Final Paper Submissions : **23 October 2018**

IEEE ICIRT 2018 Secretariat:

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27th Conference on Electrical Performance of Electronic Packaging and Systems
San Jose, CA, USA
October 14 – 17, 2018



Call for Papers



EPEPS is the premier international conference on advanced and emerging issues in electrical modeling, measurement, analysis, synthesis, and design of electronic interconnections, packages, and systems. It also focuses on new methodologies and CAD/design techniques for evaluating signal, power, and thermal integrity and ensuring performance in high-speed, RF, and wireless designs. EPEPS is jointly sponsored by IEEE Electronics Packaging Society, IEEE Microwave Theory and Techniques Society and IEEE Antennas and Propagation Society. Submitted papers should describe new technical contributions related to the area of electrical performance of high-performance interconnect systems, covering:

- System-level, board-level, package-level and on-chip interconnects
- High-speed channels, links, backplanes, serial and parallel interconnects, SerDes
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- Signal and thermal integrity
- Power integrity and power distribution networks
- Low power mobile and personal applications
- Memory and DDR interfaces
- Jitter and noise management
- Electronic packages and microsystems
- Heterogeneous integration, 2.5D/3D interconnects and packages, TSVs and MCMs
- Electromagnetic (EM) and EM interference modeling, simulation algorithms, tools, and flows
- Macromodeling and model order reduction as it applies to electrical analysis
- Advanced and parallel CAD techniques for signal, power, and thermal integrity analysis
- Measurement and data analysis techniques for system-level and on-chip structures.

Submission Deadline: July 15, 2018, 8 p.m. Pacific Time

Conference Chairs:

Xiaoxiong Gu (IBM Research) xgu@us.ibm.com

Roni Khazaka (McGill University) roni.khazaka@mcgill.ca

For more information/contact: epeps-admin@illinois.edu

Submission Format: 2-column, 3-page PDF format only.

Selected papers will be invited for a special issue in *IEEE Transactions on Components, Packaging, and Manufacturing Technology*. Information for authors can be found at www.epeps.org. Submitted manuscripts should be camera ready and compliant with the general standards of the IEEE, including appropriate referencing. Noncompliant manuscripts will not be considered for review.

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Tutorials: EPEPS offers tutorials on state-of-the-art topics during the conference.

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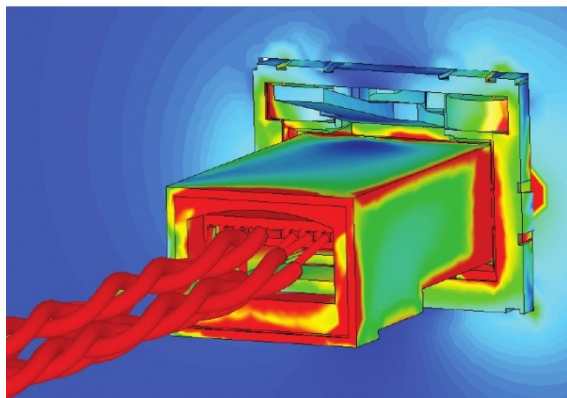


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