



2016

**Asia-Pacific International Symposium on Electromagnetic
Compatibility & Signal Integrity and Technical Exhibition
Shenzhen, China**

APEMC 2016

Shenzhen, May 18-21

FINAL PROGRAM

Shenzhen Convention
and Exhibition Center, Shenzhen

The Hub for ICT

APEMC 2016

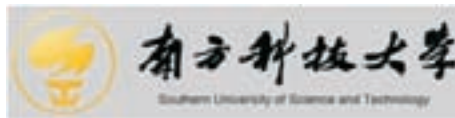
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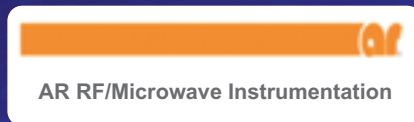
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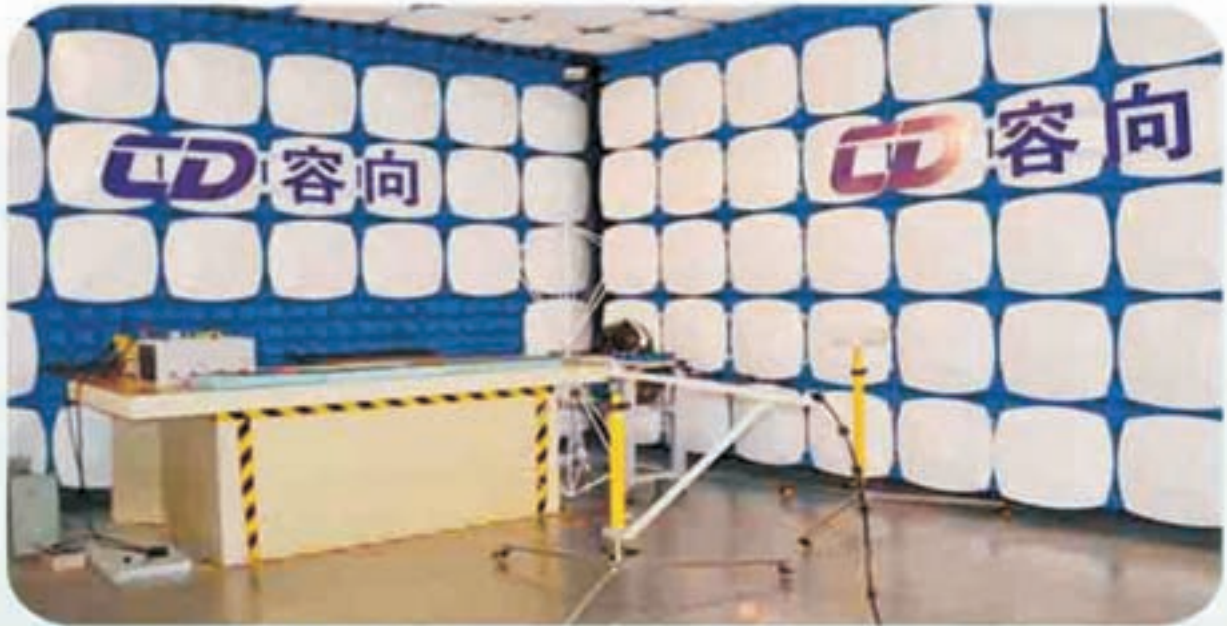


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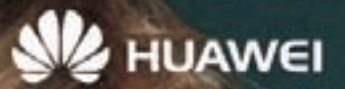
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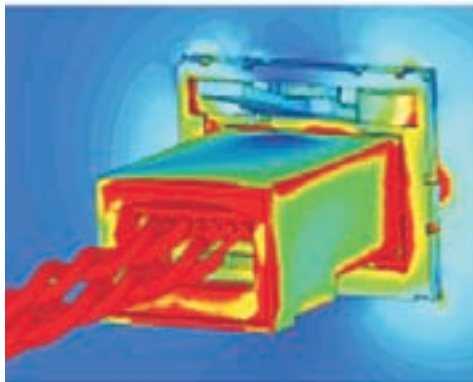
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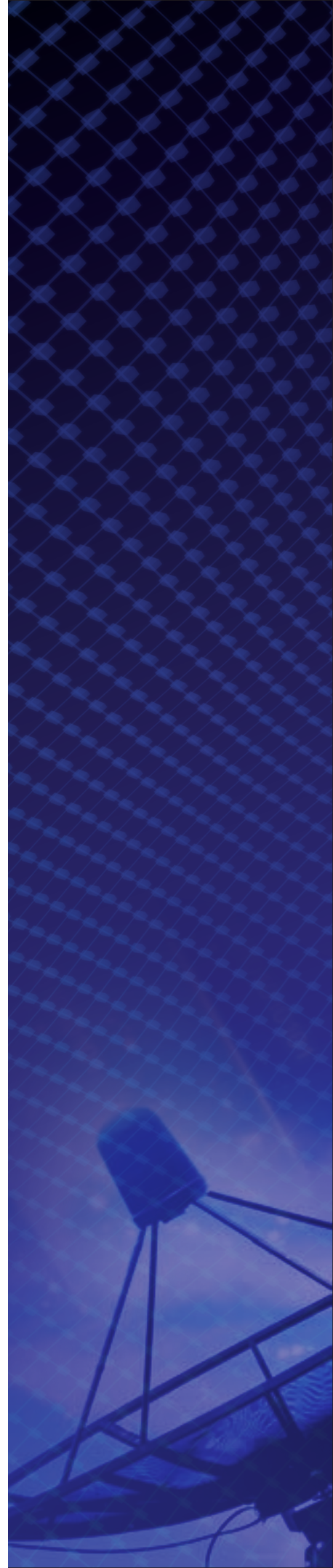
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INVITATION FROM THE GENERAL CHAIR



On behalf of the APEMC 2016 Steering Committee, I am privileged and honored to warmly invite you, your colleagues and families to join us for the flagship event of Asia-Pacific EMC from May 18-21 in Shenzhen, **the Window of the World**.

The 2016 Asia-Pacific International Electromagnetic Compatibility Symposium & Signal Integrity (APEMC 2016) perpetuated a proud tradition that began in 2006 with the first EMC-Zurich in Singapore. It was followed by the highly successful 2008 APEMC in Singapore, the 2010 APEMC in Beijing, and the 2011 APEMC on Jeju Island, Korea, the 2012 APEMC in Singapore, the 2013 APEMC in Melbourne, Australia, and the 2015 APEMC in Taipei. The APEMC has thus become a much anticipated annual event that moves among the different places in the region and features a substantial industrial exhibition to address the needs of industry.

APEMC 2016 moves to Shenzhen with the ambition to respond to the needs and aspirations of a rising EMC community in the region, to promote excellence among its members and to foster links to the rest of the world. The symposium is held in Shenzhen Conference and Exhibition Center, which boasts not only some best convention facilities for our technical sessions, workshops, special events and exhibits, but also world-class accommodation, spectacular attractions, entertainment, and fine dining for the entire family. Shenzhen, next to Hong Kong, is a vibrant, innovative, ultra-modern city and it has world-class electronic industry and research centers.

The Technical Program Committee (TPC) has made a great effort and selected over 300 papers for presentations during the four-day event. The papers cover a wide spectrum of topics ranging in EMC, signal integrity & power integrity as well as the emerging technical topics such as 5G communication. Four topical meetings organized by four teams in this symposium specially address the new development in wireless power transfer EMC, smart grid & power electronics EMC, modern semiconductor EMC and biomedical electromagnetics. A half-day Industrial Forum has also been planned to discuss industry applications.

A three-day Exhibition on the state-of-the-art EMC and RF/Microwave Measurements and Instrumentation further complements the symposium. It provides an excellent opportunity to showcase products, software, publications and services.

Your valued presence and contributions to the EMC-in-Shenzhen has made this event a good networking platform for exchanging of ideas and innovations.

On behalf of the symposium steering committee, I would like to record my appreciation to all the authors, speakers, session organisers, reviewers, sponsors, exhibitors for your strong support to this event. To the Technical Program Committee, the Organising Committee, and volunteers, may I sincerely thank you for your very hard work and contribution.

To our guests from overseas, please do take time to savour and enjoy the many sights and flavours of this diverse, vibrant, ultra-modern city. Have a wonderful stay here and we hope to make it a truly memorable one for you.

With best wishes,

Er-Ping Li

General Chair for APEMC 2016

MESSAGE FROM TECHNICAL PROGRAM COMMITTEE CHAIRS

On behalf of the Technical Program Committee, we sincerely welcome you to 2016 APEMC, the biggest EMC technology event in the Asia-Pacific region.

In 1865, James Clerk Maxwell (1831.06.13 – 1879.11.05) published *A Dynamic Theory of the Electromagnetic Field*. As commented by Albert Einstein, “the work of James Clerk Maxwell changed the world forever.” Hence, the past year marked the 150th anniversary of Maxwell’s equations and the International Year of Light.

Significant scientific progress and technical innovations originate from Maxwell’s 1865 paper including the fundamental physics of electromagnetics compatibility. From coupling to radiation, Maxwell’s electromagnetic theory governs physical principles used in analyzing and solving EMC, EMI, Signal Integrity, Power Integrity problems and so on. Today we can handle more complex EMC problems because of our better understanding of Maxwell’s equations. Sophisticated commercial EDA tools and modern instruments have greatly extended our ability in modeling and characterizing EMC problems. Engineers can solve them and test their results more efficiently and more effectively in an unprecedented scale.

Over the past 150 years, even though Maxwell’s equations remained unchanged, the world has changed forever. Embraced by broader bandwidth, denser integration scaling, and higher power consumption, EMC has become a comprehensive technology that demands consolidated solutions from electronic engineering, electrical engineering, measurement methodologies, physics, mathematics, manufacturing and so on. Particularly in novel emerging technologies such as Wireless Power Transfer, 5G Communications, Smart Grid, Biomedical Engineering, and Engineered Materials, EMC related issues are among critical bottlenecks. Therefore, it is not really surprising that 2016 APEMC has received a record number of papers in emerging technologies across multiple disciplines.

EMC very often determines or differentiates the final quality of modern electronics. The connection between academia and industries is a critical bridge to advances towards novel and practical EMC solutions. APEMC dedicates itself as the largest knowledge exchange platform for EMC in the Asia-Pacific region. Academia will find cutting-edge research topics from practices and issues faced by industries. Vice versa, engineers will find the state of art solutions that could solve their EMC issues.

Powered by over 300 technical papers and various activities, 2016 APEMC is the largest annual EMC technical event in the Asia-Pacific region. Besides regular technical sessions, the conference will include 4 plenary talks, 2 keynote speeches, one Luncheon talk, 14 special sessions, 8 workshops, 8 tutorials, 4 topical mini-symposiums, 19 invited papers. From IC to system, from electronics to bioengineering, from measurements to modeling, from traditional topics to emerging technologies, from standards and regulations to EMC manuscript writing, 2016 APEMC covers comprehensively the full scope of EMC. We are confident that everyone will gain tremendously from attending 2016 APEMC.

As the Window of the World and the World’s Factory, the host city Shenzhen is a place that produces a variety of electronic products used by us every day. Local demands for EMC solutions and countless EMC suppliers make the APEMC even closer to the heart of key EMC applications. With its proximity to Hong Kong, Guangzhou, and Macau, 2016 APEMC offers not only a great technical event of your choice, but also boundless exciting opportunities for your visits to either local universities and industries or great places of interest.

We sincerely thank all authors, paper reviewers, sponsors, exhibitors, committee members and all other supporters of the symposium for their excellent contributions. Your interest, enthusiasm, EMC vision and your participation will make 2016 APEMC an extraordinary event.

Welcome to 2016 APEMC! We are looking forward to meeting you in Shenzhen!

Chairs for Technical Program Committee



Lijun Jiang

University of Hong Kong



Farhad Rachidi

Swiss Federal Institute of Technology



En-Xiao Liu

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[Topical Symposium] Smart Grid & Power Electronics EMC

Organisers: Henglin CHEN, Zhejiang Univ.; Dave THOMAS, Univ. of Nottingham;
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[Topical Symposium] Biomedical Electromagnetics

Organisers: Guizhi XU, Hebei University of Technology; Eung-Je WOO, Kyung Hee Univ.;
Co-organisers: Tao SONG, Institute of Elec. Eng of CAS; Yong HU, Univ. of Hong Kong

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GENERAL INFORMATION

REGISTRATION

Early Bird Registration:

Author registration: at least one author of the paper must register on or before 9 March 2016

Early bird registration: for other delegates is on or before 15 April 2016

Registration Method: Email form and payments to apemc@apemc.org

Advance Registration: All attendees are required to register, including authors, workshop/tutorial instructors and exhibitors. For paper authors, inclusion of your final paper in the conference proceedings and 3-page paper in IEEE Digital Library require at least one of the authors on your author list must be registered on or before **March 9, 2016** when you submit the final paper.

The paper will not be included in the IEEE Digital Lib (EI Index) and conference proceedings if No presentation given during the conference.

Early bird for other delegates is on or before April 15, 2016. To register for the symposium, please Email form and payments to Symposium. Those who made registration can collect the official conference badges from the on-site registration desks when arrive at the conference site.

Package A/B/C – Full Meeting Registration from May 18-21 for Members. Registrants are entitled to the symposium proceedings(USB) , and admission to all the Workshops, Tutorials, Symposium technical sessions, Topical Meetings, Exhibits, Welcome Reception, Symposium Banquet.

Package D- Students are open to all full time students and are required to present a student verification letter including Student matriculation number (student ID), expiration date and University name. Student registration includes the symposium program, symposium proceedings , and admission to the symposium, exhibits.

Withdrawal/Cancellation Policy & Invoices: You may send a substitute. **We regret that there will be no refund for withdrawal/cancellation received after May 1, 2016. An administration fee of US\$50(330RMB) applies for withdrawal/cancellation.** Unless otherwise specified, mailing address on invoices shall follow registrant address on the registration form. Please return the Registration Form together with payment to the Conference Secretariat. Registration will only be confirmed once full payment is received.

Registration Method

a) On-line registration: <http://www.apemc.org/registration.html>

b) To complete the registration form and email to APEMC Secretariat: apemc@apemc.org

Registration Enquiry

Symposium Secretariat

Ms. Sara Gou

Tel: (86) 15900202810

Email: apemc@apemc.org

APEMC 2016 REGISTRATION FORM

1. Name and Address

Title: Prof Dr Mr Mrs Ms

First/ Given Name: _____

Last/ Family Name: _____

Organization: _____

Job Title/Designation: _____

Tel: _____ Fax: _____

Email: _____

Address: _____

City: _____ Country: _____ Zip/Postal Code: _____

Category: Speaker Delegate Exhibitor

2. Registration Fee

Student Rate: Students must send in their proof of full-time student status together with the registration form;
IEEE/CIE/CES Members: Membership ID verification required.

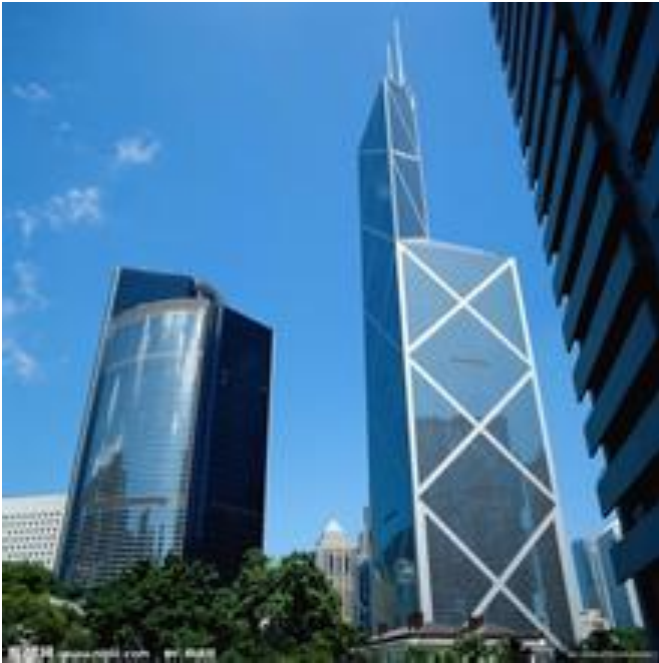
At least ONE Author needs register & pay by March 9 to have the Manuscripts published in the symposium proceedings.	Author to indicate Paper ID here: _____	Fees are in <input type="checkbox"/> RMB		
Registration Categories & Packages		On or before April 15 RMB	After April 15 RMB	Amount
Package A: Full Meeting Registration (May 18 to 21) for IEEE /CIE/CES Members	Member Number (ID) _____	3950 (S\$875)	4350 (S\$965)	
Package B: Full-Meeting Registration (May 18 to 21) for non-IEEE/CIE/CES Members		4100 (S\$910)	4500 (S\$1000)	
Package C: <u>Retired /IEEE/CIE/CES Life member</u> Registration (May 18 to 21)		2300 (S\$510)	2500 (S\$550)	
Package D: <u>Student</u> Registration (May 18 to 21)		2300 (S\$510)	2500 (S\$510)	
Grand Total Registration Fee in RMB _____				

Note: RMB- Chinese Yuan (REN MIN BI), S\$- Singapore Dollar . Changing rate in early Feb. 2016 is 1.0 US\$ ~6.6 RMB.

Please provide your credit card information, and **complete the registration form , email to apemc@apemc.org.**

Visa Card	Master Card	AMEX Card
Name of Credit Card holder: _____	Expiry Date (mm/yy): _____	
Credit Card Number: _____	CVV code _____	Card holder's Signature: _____

ABOUT SHENZHEN



Shenzhen is located in the southern portion of the Guangdong Province, on the eastern shore of the Pearl River Delta. Neighboring the Pearl River Delta and Hong Kong, Shenzhen's location gives it a geographical advantage for economic development. In 1980, the first Special Economic Zone of China was built in this city. From then on, the city became a highlight of China, one known for its rapid economic growth.

More than thirty years ago, Shenzhen just was a small fishing village called Baoan County. In 1979, it was renamed Shenzhen City. When the Special Economic Zone was built, the city was divided into six zones, four of which are located in the Special Economic Zone.

While the city does not have as many historical attractions as other famous cities in China, it has created a number of excellent theme parks which entertain while teaching visitors about China and the world. Splendid China and China Folk Culture Villages introduce visitors to China's long history and varied cultures, while Window of the World will take you to every corner of the world in one day. Additionally, if

you want to make your stay even more luxurious, visit Happy Valley, the largest of the theme parks in the city, situated on a picturesque coastline. More attractions are: Dameisha & Xiaomeisha Scenic Area, Meridian View Center, Minsk World, Overseas Chinese Town East, Shenzhen Safari Park, Xiaomeisha Sea World and Xili Lake Resort.

Come enjoy the coastal view, the theme parks, and the city!



CONFERENCE VENUE

Shenzhen Conference and Exhibition Center(SZCEC)

The 2016 APEMC will be taking place at Shenzhen Conference and Exhibition Center(SZCEC). Located in the central district of Shenzhen, SZCEC provides spacious floor for industrial exhibitions and top conference service in mainland China. Shenzhen exhibition industry has been ranked within top four in China. And SZCEC is ranked among the top three in Chinese exhibition facilities.



Shenzhen Conference and Exhibition Center has the world's largest sunlight shading roof system, which is made completely of aerospace materials. Supported by the major passage on the 2nd floor, separate entrances to each exhibition hall, and 137 escalators and lifts, the internal floor plan designs of SZCEC made indoor traffics very efficient and convenient.



LOCATION MAP AROUND THE CONFERENCE VENUE



★ Shenzhen Conference and Exhibition Center(SZCEC)

Shenzhen Convention & Exhibition Centre

HOTELS

- | | |
|---------------------------|-------------------------------------|
| 1. Four Seasons Hotel | 4. Fuqinglong Huatian Holiday Hotel |
| 2. Wongtee V Hotel | 5. Grand Chu Hotel Shenzhen |
| 3. Wyndham Grand Shenzhen | 6. Vienna International Hotel |

ATTRACTIONS

- | | |
|---|---------------------------------------|
| 7. Overseas Chinese Town East | 12. Dameisha & Xiaomeisha Scenic Area |
| 8. Window of the World | 13. Shenzhen Safari Park |
| 9. Splendid China and China Folk Culture Villages | 14. Minsk World |
| 10. Happy Valley | 15. Xili Lake Resort |
| 11. Meridian View Center | |

ENTERTAINMENT & SHOPPING

- | | |
|---------------------------|----------------------|
| 16. Wongtee Plaza | 19. COCO Park Xinghe |
| 17. Lotus Hill Park | 20. Huanggang Park |
| 18. Shenzhen Civil Center | |

Shenzhen Conference and Exhibition Center(SZCEC)
No.6007 Shennan Avenue, Futian District, Shenzhen 518040, China
(+755 82848676 F +755 82848677)

Website: www.szcec.com

Nearest Subway Station

Conference and Exhibition Center Subway Station (just outside of SZCEC)

HOW TO GET TO THE SHENZHEN CONFERENCE AND EXHIBITION CENTER (SZCEC)

Please visit SZCEC official website for more information on directions.



Transportation to SZCEC in Shenzhen

Shenzhen Convention and Exhibition Center (SZCEC) has a dedicated Subway Station in front of it – “Convention and Exhibition Center Station” on Subway Line 1. As long as you find a way to get into Shenzhen subway system, you will easily reach SZCEC or your hotel. For international travellers, there are several hubs frequently used in Shenzhen: Lo Wu Port (罗湖口岸), Futian Port (Lok Ma Chau) (福田(落马州)口岸), Huanggang Port (皇岗口岸), Shekou Wharf(蛇口码头). You might use these hubs to enter Shenzhen from Hong Kong. Then from these hubs, you can get to SZCEC using the following instructions:

► Lo Wu Port → SZCEC

Take Shenzhen Subway Line 1 from “Lo Wu Station” to the “Convention and Exhibition Center Station” (Exit C, D, or E) to SZCEC. The Subway Ticket is 3 CNY. It can be purchased at the station using cash.

You may also take Bus No. 337 from Lo Wu Railway Station to Convention and Exhibition Center South Station.

If you take Taxi, the estimated cost is around 30 CNY.

► Futian Port (Lok Ma Chau) → SZCEC

Take Subway Line 4 from “Futian Port Station” to the “Convention and Exhibition Center Station” (Exit C, D, or E) to SZCEC. The Subway Ticket is 2 CNY. It can be purchased at the station using cash.

If you take Taxi, the estimated cost is around 20 CNY.



► **Huanggang Port (24-hour-working) → SZCEC**

Take bus Airport Line 9, or Bus No. 121 or 235 from Huanggang Port to the Convention and Exhibition Center.
It costs around 45CNY if you take a Taxi.

► **Shekou Wharf → SZCEC**

Take Subway Line 2 from Shekou Subway Station to the Window of the World Bus/Subway Station. Then take Subway Line 1 to the "Convention and Exhibition Center Station" (Exit C, D, or E) to SZCEC. The Subway Ticket is 6 CNY. It can be purchased at the station using cash.
You may also take the Bus No. K113 or J1 from Shekou Port Station to Convention and Exhibition Center Station.
It costs around 80 CNY if you take a Taxi.



Taking the Airplane

There are two major airports nearby can be used for the conference travel:

- (1) Shenzhen Bao'an International Airport in Shenzhen;
- (2) Hong Kong International Airport.

► **Shenzhen Bao'an International Airport → SZCEC**

Once you get out of the luggage pickup area, take the Subway Shuttle Bus M416 first to the "Hourui Station" of Subway Line 1. Then take Subway Line 1 from "Hourui Station" to "Convention and Exhibition Center Station" (Exit C, D, or E) to SZCEC. The Subway Ticket is 7 CNY. It can be purchased at the station using cash.

Another option is to go to the Bao'an Airport (Airport Line Station) Bus Station and take the Bus Airport Line 9 to SZCEC. The ticket is 20 CNY.

The 3rd option is taking Taxi, which costs around 120 CNY.

► **Hong Kong International Airport → SZCEC**

From Hong Kong International Airport, there are several ways to go to the SZCEC and its nearby area. Please note no matter which way you take, you need to go through Hong Kong – Mainland China Border Checkpoint when you enter Shenzhen from Hong Kong in the middle of your trip. You need to prepare your passport IDs and valid Chinese Visa to go through these ports.

Take the shuttle service from "E&E" Bus Company (Yung Dong Direct Bus). It offers direct shuttle service from Hong Kong International Airport to the hotel "The Ritz-Carlton Shenzhen" (深圳星河麗思卡爾酒店), which is right in front of the conference venue SZCEC.

The drop off location is also surrounded by many symposium recommended hotels.

*** Here is necessary information you need to use this shuttle line:**

The shuttle terminal is located at the Coach Station of Terminal 2, Hong Kong International Airport. The shuttle is the "Eternal East Cross-Border Coach." You shall take Shenzhen C Line to "The Ritz-Carlton Shenzhen" (深圳星河麗思卡爾酒店). The shuttle fare is 200 HK Dollar per person. It provides one coach every half hour from 9:00am to 22:30pm.

The shuttle might take 2 hours, including the time through the HK-Mainland China Custom Check Point.

The shuttle ticket can be purchased at the Coach Station of Terminal 2, Hong Kong International Airport.

The return trip shuttle service from "The Ritz-Carlton Shenzhen" to Hong Kong International Airport is also provided by the same company from 6:40am to 16:40pm in a frequency of one shuttle per hour. The return trip ticket is 200 Chinese Dollar.

Its contact phone number is +852-3760 0888 (HK) and +86-37600888 (Mainland China). For details, please visit

http://www.eebus.com/e/cmspage.asp?content_id=255&cat_id=35&cat_level=2

Please note that at the HK-Mainland China Custom Check Point, you need to go through the custom officer's check with your travel IDs such as passport and Chinese Visa to enter Mainland China. You might need to bring your luggage with you to go through the luggage check, too. Once you pass these checks, you will go onboard the same coach at the other side of the border to continue your trip to "The Ritz-Carlton Shenzhen."

Take Mainland Coach services at the Hong Kong International Airport to Shenzhen Huanggang Port. After you entered Shenzhen at Huanggang Port, you can take Taxi (around 45 CNY) to SZCEC. Or you can walk to Subway Line 4 "Luo Ma Chau Station" (about 8 minutes). Then take the Subway Line 4 to Convention and Shenzhen Conference and Exhibition Center Station.

The Mainland Coach information at the Hong Kong International Airport to Shenzhen Huanggang Port can be found at

<http://www.hongkongairport.com/CBT/Controller?locale=eng>

Please make your destination choice to be "Huanggang" on the webpage to find feasible coach schedule.

Please note at Huanggang Port, you need to go through custom officer's check with your travel IDs such as passport and Chinese Visa to enter Mainland China. You need to bring your luggage with you to go through the luggage check, too. Once you pass these checks, you reach the Mainland China side part of Huanggang port, where you can look for Taxi or Subway.

It is possible to take the ferry from Hong Kong to Shekou Port in Shenzhen. Its details can be found at

<http://www.hongkongairport.com/eng/transport/transport-connection-with-mainland-china/ferry-transfer/service-at-a-glance.html>



Taking the (High-speed) Train

You can take (high-speed) trains to one of several Shenzhen train stations. Then you can use the subway system of Shenzhen to reach SZCEC and your hotel.

Shenzhen Railway Station (Lo Wu) → SZCEC

Take Subway Line 1 from "Lo Wu Station" to "Convention and Exhibition Center Station" (Exit C, D, or E). The Subway Ticket is 3 CNY. It can be purchased at the station using cash.

You may also take Bus No. 337 from Lo Wu Railway Station to Convention and Exhibition Center South Station.

If you take Taxi, the estimated cost is around 30 CNY.

► Shenzhen North Railway (High-speed) Station → SZCEC

Take Subway Line 4 from "Shenzhen North Railway" to "Convention and Exhibition Center Station" (Exit C, D, or E). The Subway Ticket is 4 CNY. It can be purchased at the station using cash.

You can also take Bus No. M347 at the Shenzhen North Bus Terminal to SZCEC.

It costs around 50 CNY if you take a Taxi.

► **Shenzhen East Railway Station (Boogie) → SZCEC**

Take Subway Line 3 from “Boogie Station” to “Laojie Station”. Then transfer to Subway Line 1 to “Convention and Exhibition Center Station” (Exit C, D, or E). The Subway Ticket is 5 CNY. It can be purchased at the station using cash.

Take Bus No. M224,371,379,398 at the Shenzhen East Bus Station to Convention and Exhibition Center South Station.

It costs around 50 CNY if you take a Taxi.

► **Shenzhen West Railway Station (Nantou) → SZCEC**

Take Bus No. B682,58 at Nantou West Railway Station to Daxin Bus Station (Daxin Subway Station). Then transfer to Subway Line 1 to “Convention and Exhibition Center Station” (Exit C, D, or E). The Subway Ticket is 6 CNY.

Or take Bus No. 229, 353 to Convention and Exhibition Center South Station.

It costs around 50 CNY if you take a Taxi.



Taking the Inter-city Bus.

Lo Wu Bus Station → SZCEC

Take Subway Line 1 from “Lo Wu Station” to “Convention and Exhibition Center Station” (Exit C, D, or E). The Subway Ticket is 3 CNY.

It can be purchased at the station using cash.

You may also take Bus No. 337 from Lo Wu Railway Station to Convention and Exhibition Center South Station.

If you take Taxi, the estimated cost is around 30 CNY.

► **Futian Bus Station → SZCEC**

Take Subway Line 4 from “Futian Port Station” to the “Convention and Exhibition Center Station” (Exit C, D, or E) to SZCEC. The Subway Ticket is 2 CNY. It can be purchased at the station using cash.

If you take Taxi, the estimated cost is around 20 CNY.

► **Nanshan Bus Station → SZCEC**

Take Bus No. 223 at Nanshan Bus Station to City Six Hospital Bus Station (Taoyuan Station). Then transfer to Subway Line 1 to the “Convention and Exhibition Center Station” (Exit C, D, or E) to SZCEC. The Subway Ticket is 5 CNY.

Take Bus 201, B623 at Nanshan Bus Station to Daxin Primary School Bus Station (Daxin Subway Station). Then transfer to Subway Line 1 to the “Convention and Exhibition Center Station” (Exit C, D, or E) to SZCEC. The Subway Ticket is 5 CNY.

It costs around 25 CNY if you take a Taxi.

► **Longhua Bus Station → SZCEC**

Take Bus No. M239, M732, B648 at Longhua Bus Station to Longhua Station (Longhua Subway Station). Then transfer to Subway Line 4 to the “Convention and Exhibition Center Station” (Exit C, D, or E) to SZCEC. The Subway Ticket is 5 CNY.

It costs around 70 CNY if you take a Taxi.



Driving by Yourself

Please search for "Convention and Exhibition Center, Fuhua Third Crossroad, Futian district, Shenzhen" in GPS. The navigation will plan your traffic route according to your current position.

► **Warm prompt:** non-Shenzhen vehicles are limited during 7:00-9:00, 17:30-19:30 in urban, other time and weekends are not limited. We advise you to go on the Guangshen Expressway then Huanggang Road, then Binhe Avenue to the Convention and Exhibition Center so that it will not be limited. If you have to drive in urban during the limited time, please visit

<https://app.stc.gov.cn:8091/webcar/index.jsp>

for your non-Shenzhen temporary vehicle permit.

► **Parking:** Convention and Exhibition Center parking lot consists of the ground and underground parking lots. Planned parking number is 2138 (among which 1263 are on the ground and 875 are underground) while the actual number is about 1800. There are three entrances of ground parking lot, east gate, west gate, north gate 1 and north gate 2, connecting Jintian Road, Yitian Road and Fuhua Third Road, respectively. You can get in and out of the underground parking lot through the Fuhua Third Road and Binhe Road with 2.2 meters height limitation and only cars are permitted to be parked in. Number 7-14 elevators from the underground parking lot can take you to each floor of the Convention and Exhibition Center.



Travel From Downtown



Station	Subway and Bus Number
Convention and Exhibition Center subway station	Subway line 1 (luobao line) 、 4 (longhua line) C、D、E exits of Convention and Exhibition Center
Convention and Exhibition Center	Airport line 9、peak line 9、peak line 14、peak line 19、peak line 23、line 50、interval line 76、line 121、line 371、line 375、line 379、line K578 (left loop)
Fuhua Third Crossroad	peak line 4、peak line 19、line 33、line 34、line 50、line 60、line 62、line 64、line 71、interval line 76、line K113、line 235、line M347、line 371、line 374、line M390、line N9
Convention and Exhibition Center south station	line 229、line 337、line 338、line 353、line 369、line 382、J1、peak line 58、tour line H92



Shenzhen Metro (Subway) Map

ACCOMMODATION

Special rates have been negotiated for the 2016 EMC-Symposium in Shenzhen attendees at the hotels listed in the symposium web. For hotel reservation, please refer to the conference website <http://www.apemc.org/hotel.html>

Four Seasons Hotel★★★★★

The Four Seasons Hotel Shenzhen (Shenzhen Siji Jiudian) is located opposite to Shenzhen Convention & Exhibition Center.

The on-site restaurant serves both Chinese and Western dishes. Room service is available.

For those with business or social events to conduct, the hotel offers various meeting rooms and 1 banquet hall.

During their spare time, guests can enjoy massage, relax in the spa, work out in the gym or dip into the pool.

It takes 2 minutes to the exhibition venue on foot, 40 minutes to Shenzhen Airport.

Room rate per night: CNY1500++



Wongtee V Hotel★★★★★

The Wongtee V Hotel (Huangting V Jiudian) is a business hotel in Futian District. It is a 2-minute walk from Shenzhen Convention and Exhibition Center, 30 minutes by car to Shenzhen Railway Station and 40 minutes to Shenzhen Airport. This hotel includes 45 uniquely designed suites and 245 apartments. All rooms are equipped with a flat-screen cable TV, free wired Internet and an iPod dock. The 24-hour butler service provides personalized services for each guest. When it comes to relaxation, the hotel offers modern fitness facilities for health-conscious guests. Guests can feel rejuvenated after the spa, or they can go shopping in the mall on the premises.

It takes 5 minutes to the exhibition venue on foot ,40 minutes toShenzhen Airport.

Room rate per night: CNY1100++



Wyndham Grand Shenzhen★★★★★

Wyndham Grand Shenzhen is located in 3rd FuHua Road and CaiTian Road interchange nearby the Shenzhen International Convention and Exhibition Center, conveniently reachable with the Shenzhen subway system, through the Luohu boarder and Futian border from Hong Kong. The Hotel is only 30 minutes drive from Shenzhen International Airport and 60 minutes from Hong Kong International Airport. Luxury hotel facilities and convenient transportation have become the first choice for business and leisure travelers. The hotel features 232 guestrooms within 43 suite rooms; including four especially designed suites and one Presidential Suite with an impressive 270 square meters of space on the top floor. All the rooms are designed with large windows to help bring natural day light in and the bathroom is equipped with a unique shaped tub tailor made only for the Wyndham Grand Shenzhen

It takes 10 minute to the exhibition venue on foot ,45 minutes to Shenzhen Airport.

Room rate per night: CNY1000++



Fuqinglong Huatian Holiday Hotel★★★★★

Conveniently situated between the Shenzhen Convention & Exhibition Center and Huanggang Port, the Fuqinglong Huatian Holiday Hotel (Fuqinglong Huatian Jiari Jiudian) is a short walk south of Xiagang subway station. The hotel is about a 35-minute drive from Shenzhen Baoan International Airport and a 10-minute drive from Shenzhen Railway Station. It takes 10 minutes to the exhibition venue on foot ,45 minutes to Shenzhen Airport.

Room rate per night: CNY549++

Grand Chu Hotel Shenzhen★★★★★

The Shenzhen Grand Chu Hotel (Shenzhen Chutian Dajiudian) has been renovated in 2010. All rooms are furnished with memory pillows and cozy mattresses.

The Chinese restaurant offers a solid selection of cuisines from spicy Sichuan and Hunan cuisines to authentic Cantonese food. Those organizing meetings, presentations and other events have several multi-functional halls and conference rooms equipped with video conference facility at their disposal. It takes 5 minutes to the exhibition venue by bus ,40 minutes to Shenzhen Airport.

Room rate per night: CNY460++

Vienna International Hotel★★★★★

Shenzhen Vienna international hotel is located in the futian district new three street and bestway road interchange, only 5 minutes drive distance to huanggan port, convention and exhibition center, 15 minutes drive distance to luohu port, 30 minutes from shenzhen international airport, traffic is very convenient. Shenzhen Vienna international hotel is the sixth branch, the Vienna hotel group is a business type hotel built according to the advanced standard. The hotel has more than 300 beautifully designed, well-appointed guest rooms

Room rate per night: CNY450++

Hotel registration enquiry and for other lower rate hotels, please contact
Ms. Penny Huang
Tel: (86) 15099909672/(86)4008809805
Email: service@bestmeeting.net.cn

HOTEL RESERVATION FORM

Please fill the information required if you need to book rooms, please Email to official travel consultant before 15April, 2015, Due to more guests attend exhibitions, Rooms are reserved on a first-come-first- served basis.Please fill up all the information required in the check-in form for your smooth check-in.

1. Personal Information: (Please use block letters or attach business card.)

Contact Person:	Booth Number:
Organization/ Com:	Email:
Country:	Mobile phone:
Tel :	Fax:

2.Hotel booking Details:

Guest Name:	
Hotel Preferred:	
Check-in Date:	Check-out Date:
Room category: Single/ twin / double (circle accordingly), No of room(S):	

Hotel Booking procedure

Please provide your credit card information to guarantee your room booking. And we will charge all of your room expenses from the credit Card at 7 days before your arrival.

I hereby guarantee my booking by my following valid card:

Visa Card	Master Card	AMEX Card
Name of Credit Card holder:	Expiry Date (mm/yy):	
Credit Card Number:	CVV code	Card holder's Signature:

3.Airport Transfer service:

Shenzhen Baoan Airport transfer service by Limousine: (RMB400 per way for 1-2 persons, RMB480 for max. 3-5 persons)
 Hongkong transfer service by Limousine: (RMB1000 per way for 1-2 persons, RMB1100 for max. 3-5 persons)

I need for Arrival Departure, Number of person(s):		
Arrival Flight No:	Arrival local date:	Estimated arrival Time:
Departure Flight No:	DepartureDate:	departure Time:

If you need air tickets service, please feel free to contact us.

4.Special notes from you if any:

Signature:	Date:
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Please fill up the above form, Should you have any query, please feel free to contact Ms. Penny Huang at email to service@bestmeeting.net.cn or call +86-15099909672 /+86-400-880-9805

USEFUL INFORMATION AND TELEPHONE NUMBERS

Restaurant and Food

SHENZHEN CONFERENCE AND EXHIBITION CENTER

Western Fast Food Area

On the North of Exhibition Section One (the floor under the Service Hall)

Garwon
Miandianwang
Pizzahut Home Service
Chuweiyuan
Lihua
Jinbeizi
Shadufanfande

Leisure Coffee Area Around the halls

8. Starbucks
9. Ming Tien Coffee
10. Croissants de France

WONGTEE PLAZA

B1 Floor

11. The Grandma's
12. Daoxiang Seafood Hotpot
13. Xijiade Dumplings
14. Princess COCO
15. The Flower Pond

G Floor

16. Luyu Fashion Faste Restaurant
17. JiuMaojiu Noodles
18. Wiwaso
19. Siam Vegetarian Diet
20. Lacesar Pizzeria
21. Charme
22. Watami Japanese Casual
23. Bashufengyue
24. Lavazza

WONGTEE PLAZA

25. Galaxy club
26. F-Cup cafe&Foods

L1 Floor

27. Qin Restaurant
28. Italian tomato
29. Deli&Leisure Yole
30. Serendipity I like
31. Yuyu Fish
32. Sijiyelin

L2 Floor

33. Annvita Tea Room
34. Starbucks

Getting Around

ShenZhen Metro

The nearest **Metro station** to the Symposium venue is the **Convention and Exhibition Center subway station**. You may check for the exact fare at an MRT station or call the hotline (0755)88960600 for assistance. The operating hours for the hotlines, from Mondays to Sundays, personal service is from 8:00 am to 8:30 pm.

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 the free inquiry hotline 12580, then press 4 for assistance.

Cab Calling : (0755) 96880

About Shenzhen

Tourist Hotline: (0755) 8288 0089

Flight Information : (0755) 2345 6789

Emergency

• Police: 110

• Fire Brigade: 119

• Ambulance: 120

REGISTRATION HOURS/FLOOR PLAN

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

Registration time	
May 17, Tuesday	3:00pm - 6:00pm
May 18-20, Wednesday to Friday	7:30am – 5:00pm
May 21, Saturday	7:30am-12:00pm
Registration Address	
Orchid Hall, Level 5, Shenzhen Conference and Exhibition Centre	
Floor Plan –5th&6th Floor: Exhibition Hall and Meeting Rooms	
Opening ceremony (开幕式及大会讲座)	Bougainvillea Hall @Level 5 (5楼杜鹃厅)
Parallel sessions (分会场)	Rose Hall1 & 2& 3 @ level 5 (5楼玫瑰厅 1,2,3)
	Narcissus A&B @level (6楼水仙厅)
Exhibition Hall (展览厅)	Orchid Hall @Level 5 (5楼兰花厅)
Secretariat Room (秘书室)	Lotus Hall 5 @Level 5 (5楼荷花厅)
Speaker Ready Room (试讲室)	Lotus Hall 3 @level 5 (5楼荷花厅)



INSTRUCTIONS TO ORAL & POSTER PRESENTERS

1. Poster Presentation

Poster sessions will be held at Orchid Hall @ Level 5.

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

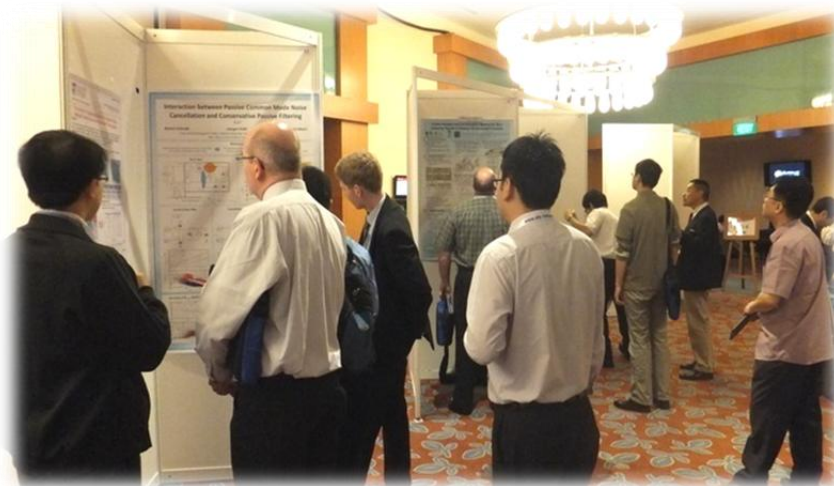
- Posters should be set up half an hour earlier for the respective Interactive Forum sessions on May 19 and 20.
- Please make sure that your paper number is clearly visible on your poster board.
- Presenters are required to be at their posters during their scheduled Open forum session.
- Tapes and other 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

- 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.

2. Oral Presentation

Prepare Your Presentation

Each oral presentation is limited to 20 minutes including questions and answers. Length of presentation material should be in accordance to your time allotted. You are requested to load your Power Point presentation materials before the session starts.

Determine Your Audio Visual Needs

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

- LCD Projector
- Windows-based PC
- Screen
- 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.

Please discuss the same materials as reported in your paper submission. At the end of the meeting, all presentation files will be destroyed.

PROGRAM OVERVIEW AND HIGHLIGHTS

Symposium Web: www.apemc.org

Symposium Hours

May 18-21, 2016, 8:30am – 6:00pm

May 18 – Wednesday

- ▶ Workshops/Tutorials
- ▶ Special Sessions
- ▶ Booth Dressing for Exhibitors (Orchid Hall @Level 5, Shenzhen Conference and Exhibition Center)
- ▶ Cocktail Reception



May 19 – Thursday

- ▶ Official Opening and Keynote Speeches
- ▶ Parallel Technical Sessions
- ▶ Topical Meetings
- ▶ Interactive Poster Sessions 1:00pm -5:30pm
- ▶ Technical Exhibition

May 20 – Friday

- ▶ Best Student Paper Competition
- ▶ Parallel Technical Sessions
- ▶ Topical Meetings
- ▶ Interactive Poster Sessions 1:00pm -5:30pm
- ▶ Technical Exhibition
- ▶ Banquet Dinner

May 21 – Saturday

- ▶ Parallel Technical Sessions
- ▶ Topical Meetings
- ▶ Workshop/tutorials
- ▶ Technical Exhibition



Paper Writing Skills for IEEE Transactions

3:50pm – 5:50am, Friday, May 20th

How to publish a paper in the *IEEE Trans on EMC*.
 How to prepare and write a good technical paper for the *IEEE Trans on EMC*.

By Professor Perry Wilson, Past Editor-in-Chief, *IEEE Trans on EMC*
 and Professor John Norgard, NASA/JSC, Associate Editor, *IEEE Trans on EMC*.

SYMPOSIUM SPECIAL EVENTS



★★★★★

Welcome Reception

May 18, Wednesday,

6:30pm – 9:00pm

Venue: Level 5, Shenzhen Conference and Exhibition Center

Warm welcome all Asia-Pacific EMC Symposium participants to mingle with each other while enjoying light food and drinks during the welcome reception. Take the opportunity to interact with old friends and network with new friends. The full registration package includes the welcome reception.

★★★★★

Symposium Banquet Dinner and Award Presentations

May 20, Friday,

7:00pm - 9:00pm

Venue: Marco Polo Ball Room

2nd Floor, **Marco Polo Hotel**

No.28 Fuhua 1st Road, Futian District

(15 minutes' walk from the convention center)

Best Student Papers and Best Symposium Papers will be announced and the awards will be presented during the Symposium Banquet Dinner. The award presentations include:

- Best Student Paper Awards
- Best Symposium Paper Award
- Certificates of Appreciation of Sponsorship



TECHNICAL SESSIONS

Technical Session Codes

Session Time/Code	WE(Wednesday)	TH(Thursday)	FR(Friday)	SA(Saturday)
08:40-10:20am	WE-AM-I-TC-10	TH-AM-I-	FR-AM-I-	SA-AM-I-
10:40-12:20pm	WE-AM-II-XX	TH-AM-II-	FR-AM-II-	SA-AM-II-
01:30-03:30pm	WE-PM-I-	TH-PM-I-	FR-PM-I-	SA-PM-I-
03:50-05:50pm	WE-PM-II-	TH-PM-II-	FR-PM-II-	SA-PM-II-

For example, WE-AM-I-TC10, **WE** indicates the date as Wednesday; **AM-I/AM-II** represents morning first/second session from 8:40-10:20am/10:40-12:20pm respectively; **TC10** represents the numbering of the Technical Topics.



APEMC 2008

KEYNOTE SPEECH I

TITLE	Interfered Technology: a Radiant Future
TIME	11:00am – 11:45am, May 19 th
VENUE	Bougainvillea Hall, Level 5, SCEC
SPEAKER	Dr. Frank Leferink THALES Group , University of Twente , The Netherlands

◆ ABSTRACT

We observed an increasing number of new Electro-Magnetic Interference (EMI) problems in the last decades. Some of them could have been predicted because these problems resulted from technological evolutions. A typical evolutionary EMI problem is signal and power integrity interference: due to the shrinking size of components and the increased switching speed of the signals, electromagnetic fields in and between interconnections are becoming limiting factors in new products. But the revolutionary EMI issues are often more dramatic because these result sometimes in catastrophic failures, such as loss of life, or delay in product introduction. We all know the start of EMI regulations for the digital computers being introduced, more than 25 years ago, to reduce radiated interference in broadcast radio and television services. More recent introductions of new technology are much faster switching power electronics, using gallium nitride components, causing interference at much higher frequencies and resulting in new and unexpected failures in other systems. Also the lack of requirements, for instance in the 2-150kHz range, creates many (new) interference issue between existing and novel electronic products. Many interference cases have been published, but the deadlock in setting a limit for Power Line Telecommunication for Mains Communication Systems in the 2-150kHz, to enable Smart Grids, is a striking example of revolutionary EMI problems. Another revolutionary example is the introduction of 4G IMT (international mobile telephone) systems causing, for instance, interference in air traffic control radars. The new European Radio Equipment Directive (RED) contains therefore new requirements for co-existence and thus selectivity of wireless systems, including receivers. Based on these experiences with EMI due to the introduction of novel technologies we will try to have an eye on possible upcoming EMI issues, and new challenges for all of us: EMC engineers.



◆ BIOGRAPHY

Frank Leferink has been with THALES in Hengelo, The Netherlands since 1984 and is now the Technical Authority EMC. He is responsible for the EMC activities in the development of new radar systems and naval platforms. He is also the Manager of Excellence on EMC of the THALES Group (65.000 employees), with over 100 EMC engineers spread over Europe, Asia, Australia and North-America, and 15 EMC laboratories.

In 2003 he was appointed as (part-time, full research) professor, Chair for EMC at the University of Twente. The position is sponsored by THALES. Nine PhD researchers, a senior researcher and several master students are active in the EMC group. He published over 300 papers in peer reviewed journals and conferences, and owns 5 patents. Prof. dr. Leferink is chair of the IEEE EMC Benelux Chapter, member of the TPC Asia-Pacific EMC, a member of the ISC EMC Europe, and associate editor of the IEEE Transactions on EMC.

KEYNOTE SPEECH II

TITLE	The Key Technologies and the Challenges in the Development of 5G Communication
TIME	11:45am – 12:30pm, May 19th
VENUE	Bougainvillea Hall, Level 5, SCEC
SPEAKER	Dr Li LI Director&Principal Scientist, Standardization and Industry, Huawei Technologies Co. Ltd, Shenzhen

◆ ABSTRACT



5G wireless networks will support 1000-fold gains in capacity, connection for at least 100 billion devices, and a 10 Gb/s individual user experience capable of extremely low latency and response times. Deployment of these networks will emerge between 2020 and 2030. 5G radio access will be built upon both new radio access technologies and evolved existing wireless technologies such as LTE, GSM and WiFi). Breakthroughs in wireless network innovation will also drive economic and social growth in entirely new ways. 5G will realize networks capable of providing zero-distance connectivity between people and connected machines. However, with such high speed data rate, the networks will suffer from the electromagnetic interference. This presentation will address the key technology challenges and requirements for 5G communication as well as the key issues related to EMI in the networks.

◆ BIOGRAPHY

Li Li received his Bachelor degree in radio technologies from Xi'an Jiaotong University, and MBA degree from Tsing Hua University. He has been working in Huawei for 20 years on Wireless product Development, R&D information system and document center management, business re-engineering of R&D processes, standardization, industry promotion and corporate strategy. He is the co-founder and director of the Standardization & Industry Department, and a leader on Huawei's overall strategy and policies for standardson IMT-2000, WiMAX, Service Network, IMT-Advanced, M2M and 5G. He is a core member of corporate strategy team, and also responsible for standards strategies formany major projects. He also serves as a member of WiMAX Forum Board of Directors (2009 to 2012), IEEE-SA Corporate Advisory Group (2007-2009), IEEE-SA BoG International Ad Hoc (2009), IEEE-SA NesCom (2010), IEEE-SA Standards Board (2011-2012), and the HoD of CCSA in oneM2M preparation (2011-2012), and Vice Chair of oneM2M Steering Committee (2012 to now). From 2014, while still working on 5G strategy and spectrum policy, he shifts his major direction to fixed communication, IT standardization, open source and industry development / ecosystem building.

PLENARY SPEECHES

TITLE	Maxwell's Equations after 150 Years and the Role of Electromagnetics in EMC
TIME	01:30pm – 02:30pm, May 19 th
VENUE	Narcissus, Level 6, SCEC
SPEAKER	Professor Weng Cho Chew The University of Illinois at Urbana-Champaign, IL

◆ ABSTRACT

Maxwell's equations have been around for over 150 years since its inception. But due to their enduring legacy, their importance has not diminished over the years. In fact, electromagnetic theory finds applications in increasing number of areas and relationship to deeper mathematics. For instance, electromagnetics is important for quantum information, quantum optics, and increasingly being used in photonic, bio technologies, and electromagnetic compatibility.

An amazing feature of Maxwell's equations is their validity from subatomic length scale to galactic length scale. Consequently, they are valid over a vast frequency range with diverse wavelengths. Furthermore, they are also valid in classical as well as in quantum electromagnetics. Hence, they are valid for highly multi-scale and multi-physics modeling. Because of the highly predictive value of Maxwell's equations, there has been always a quest for their efficient and accurate solutions. Various methods to solve Maxwell's equations have been developed since the dawn of their discovery. With the advent of computers, the need for more accurate and robust solutions does not diminish.

In this presentation will discuss the history of different applications of electromagnetics in the past century. In the context of EMC, we will also discuss the source of measurement noise in electromagnetics, and their noise types. Ways to overcome different kinds of noise will be discussed. We will also discuss possible future directions in this area.



◆ BIOGRAPHY

W.C. Chew received all his degrees from MIT. His research interest is in wave and field physics, specializing in fast algorithms in computational electromagnetics in the last 20 years. After graduating from MIT in 1980, he worked at Schlumberger-Doll Research. In 1985, he joined U Illinois Urbana-Champaign, was the director of the Electromagnetics Lab at UIUC from 1995-2007. During 2000-2005, he was the Founder Professor at UIUC, 2005-2009, the Y.T. Lo Chair Professor, and since 2013, the Fisher Distinguished Professor. During 2007-2011, he served as the Dean of Engineering at The University of Hong Kong. He has authored and co-authored three books, over 400 journal papers, and over 500 conference papers. He is a fellow of various societies, and an ISI highly cited author. In 2008, he received the CT Tai Distinguished Educator Award from IEEE AP-S, in 2013, elected to the National Academy of Engineering and in 2015, ACES Computational Electromagnetics Award.

TITLE	System Integration: Challenges and Opportunities
TIME	02:30pm – 03:30pm, May 19 th
VENUE	Narcissus, Level 6, SCEC
SPEAKER	Professor M. Swaminathan John Pippin Chair in Electromagnetics, Georgia Institute of Technology

◆ **ABSTRACT**



Form factor, weight, functionality, performance and low power are becoming some of the key drivers for applications in computing, communications, automotive and wearable electronics. These drivers are posing unique challenges for integrating systems. But, how can Electromagnetics and EMC engineers enable this trend? This represents an opportunity for all of us attending this symposium. This talk will focus on ongoing work in the area of antennas, switched mode power converters, wireless power transfer, EBG, multi-physics simulation, machine learning and signal integrity related issues in the context of system integration, which are all topics of this symposium.

◆ **BIOGRAPHY**

Madhavan Swaminathan is the John Pippin Chair in Electromagnetics in the School of Electrical and Computer Engineering (ECE) and Director of the Center for Co-Design of Chip, Package, System (C3PS), Georgia Tech. He formerly held the position of Joseph M. Pettit Professor in Electronics in ECE and Deputy Director of the NSF Microsystems Packaging Research Center, Georgia Tech. Prior to joining Georgia Tech, he was with IBM working on packaging for supercomputers. He is the author of 450+ refereed technical publications, holds 29 patents, primary author and co-editor of 3 books, founder and co-founder of two start-up companies (E-System Design and Jacket Micro Devices) and founder of the IEEE Conference Electrical Design of Advanced Packaging and Systems (EDAPS), a premier conference sponsored by the CPMT society. He is an IEEE Fellow and has served as the Distinguished Lecturer for the IEEE EMC society. He received his MS and PhD degrees in Electrical Engineering from Syracuse University in 1989 and 1991, respectively.

TITLE	Metamaterial Technology for EMC Design
TIME	11:30pm – 12:20pm, May 20 th
VENUE	Narcissus, Level 6, SCEC
SPEAKER	Professor Tzong-Lin WU National Taiwan University

◆ **ABSTRACT**

Dramatic development of electronic products, such as higher data bandwidth, more complexity of integration, lower power consumption and larger demands on wireless communication, has made designs of signal integrity (SI), power integrity (PI) and electromagnetic compatibility (EMC) become more challenging. Electromagnetic metamaterial, based on its periodic structure, controls electromagnetic waves and provides several special features benefiting SI, PI and EMC. This presentation will introduce advanced designs of metamaterial proposed by our group in the recent 10 years such as electromagnetic bandgap (EBG) structures, common-mode filters, frequency selective surface (FSS) and ferrite-free choke (FFC). The usage of these designs for SI, PI and EMC and basic design concepts will be briefly illustrated and validated with full-wave simulation and measurement. Besides metamaterial applied to EMC, wideband directional-coupler based on metamaterial and its applications of beam forming for smart antenna will also be demonstrated.



◆ **BIOGRAPHY**

Tzong-Lin Wu, Fellow of IEEE, received the B.S.E.E. and Ph.D. degrees all from National Taiwan University (NTU), Taipei, Taiwan, in 1991 and 1995, respectively. He is currently a Distinguished Professor with the Department of Electrical Engineering of NTU, and serves as a Director in Graduate Institute of Communication Engineering of NTU since 2012. His research interests include EMC/EMI, signal/power integrity design for high-speed digital/optical systems, and microwave circuits. Dr. Wu served various capacities for IEEE and General Chair of 2015 Asia Pacific EMC Symposium (APEMC). He received numerous awards from IEEE and other organizations including the Outstanding Research Award from NSC both in 2010 and 2013, 2015 IEEE EMC Society Motohisa Kanda Award for a IEEE T-EMC paper with highest citation for those published papers in past 5 years. He is currently serving as an Associate Editor for IEEE TRANSACTIONS ON ELECTROMAGNETIC COMPATIBILITY and the IEEE TRANSACTIONS ON COMPONENTS, PACKAGING, AND MANUFACTURING TECHNOLOG.

TITLE	Challenges and Opportunities for EMI Design and Mitigation
TIME	10:40am – 11:30am, May 20 th
VENUE	Narcissus, Level 6, SCEC
SPEAKER	Professor Jun Fan and Professor James L. Drewniak Missouri University of S&T

◆ **ABSTRACT**

Increasing data rates and design densities together with new enabling technologies present new challenges and necessitate new approaches in EMI design and mitigation, in order to meet design specifications, cost pressures, and regulatory requirements. This presentation will highlight several trends in EMI research with examples in the fields of above 10 GHz emissions, intra-system EMI, radio-frequency interference, noise source identification and modeling, mitigation techniques with new materials, tools, and design methodologies.

◆ **BIOGRAPHY**



Jun Fan,

Fellow of IEEE, 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. He is currently an Associate Professor. Dr. Fan is the Director of the Missouri S&T EMC Laboratory and the Director of the National Science Foundation Industry/University Cooperative Research Center for EMC. His research interests include signal integrity and EMI designs in high-speed digital systems, dc power-bus modeling, intra-system EMI and RF interference, PCB noise reduction, differential signaling, and cable/connector designs. He is an associate editor for the IEEE Transactions on Electromagnetic

Compatibility and EMC Magazine. Dr. Fan received an IEEE EMC Society Technical Achievement Award in August 2009.

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



LUNCHEON TALK

TITLE	Prospects on M-ICT(mobile Information Communication Technology) Strategy and Future Trend
TIME	12:40pm – 01:20pm, May 20 th
VENUE	Rose 3, Level 5, SCEC
SPEAKER	Dr Yuan Fei ZTE Communication ,Shenzhen

◆ ABSTRACT

Generally speaking, M-ICT strategy initiated by ZTE can resolve the issues how the whole ICT ecosystem can be reinforced and matured under the circumstance of the convergence of CT and IT. Firstly, it effectively coordinates the development of IoT, Cloud Computing, SDN/NFV, Big Data, etc. Secondly, it definitely indicates how resource sharing be realized on different levels and how hardware and software be transformed in order to suit the tendency. Lastly, it follows the tide of open source and emphasizes the importance of the contribution to relevant communities.



◆ BIOGRAPHY

Yuan Fei is the Chief Engineer of ZTE's strategy Planning Department. He has been serving and contributing in the ICT field for nearly 22 years. He constantly attends world-wide standard meetings and other typical forums. He owns abundant experiences of Cloud Computing, Internet of Everything, SDN/NFV, Big Data and other heated technologies which currently happen in the industry or community.

OVERVIEW OF TUTORIALS

TUTORIAL TU-01	Systems Metamaterials, Periodic Structures and EBG in EMC/Radiation/Guided Wave Problems
TIME	8:40am – 10:20am, Wednesday, May 18 th .
VENUE	Rose 3
ORGANIZER	Sungtek Kahng, Incheon National University
SPEAKERS	Sungtek Kahng, Incheon National University Jeongho Ju, Korea Electronics and Telecommunication Research Institute Hongjoon Kim, Kyungpook National University

◆ **ABSTRACT**

As the operating frequency goes higher and the demands on complex architectures of electronics and new materials increase, the classic guide lines and design rules on EMC and RF device designs are facing the challenges and limitations in meeting the requirements.

In response to the need to find the alternatives, periodic structures such as FSS are adopted or hybridized with the conventional practices to stop the radiated/conducted noise and unwanted resonance more effectively. Especially, the photonic bandgap design as the periodic structures with perfect or imperfect periodicity is revisited and becomes the EBG by being adapted to RF frequency from optics.

With a different motivation, metamaterial is researched that when permittivity and permeability the constitutive parameters of a material are given unusual or usual values, they possibly result in phenomena interpreted meaningful to overcome the limitations above in EMC and microwave engineering. Particularly, the left-handedness and the infinite wavelength are introduced by negative permittivity and negative permeability and zero refractive index, respectively, and they are used to change the direction or phase of wave propagation. The dispersion engineering stemming from the metamaterials has drawn attention in that it is helpful to reduce the volume of a structure and form a bandgap free from the resonance condition of the conventional periodic structure approach. So, in this session, the analysis and design methods of FSS, DNG/SNG/AMC and EBG are dealt with as well as advanced applications to EMC/antenna/RF designs. Also, we discuss the slow-wave effects of a periodic geometry and the resonant slots (non-metamaterial) of DGS and SRR/CSRR. Last but not least, a number of electromagnetic computational methods are shown to efficiently and accurately predict the scattering and radiation of the aforementioned structures.

▶ **Introduction to Metamaterials and the Advanced Technologies in EMC and RF Passive Components**

Sungtek Kahng, Dept. of Information & Telecommunication Engineering, Incheon National University

▶ **How to Control Radiation Efficiency and Polarization with Metamaterials**

Jeongho Ju, Antenna R&D Team, Electronics and Telecommunication Research Institute, Korea

▶ **Advanced Technologies in RF Active Components**

Hongjoon Kim, School of Electrical Engineering and Computer Sci., Kyungpook National University

◆ **BIOS OF SPEAKERS**



Professor Sungtek Kahng received his Ph.D. degree in electronics and communication engineering from Hanyang University, Seoul, Korea in 2000, with a specialty in radio science and engineering. From 2000 to early 2004, he worked for the Electronics and Telecommunication Research Institute on numerical electromagnetic characterization and developed RF passive components for satellites. In March 2004, he joined the Department of Information and Telecommunication Engineering at Incheon national university where he has continued research on analysis and advanced design methods of microwave components and antennas, including metamaterial technologies, EMI/EMC, SI/PI MIMO communication, and wireless power transfer for M2M/cyber-physical systems. He won the best research achievement award in December 2014 from the Korean Institute of Electrical Engineers. Plus, he has collaborated with microwave and telecommunication system-specialist companies and institutes for various projects.



Hongjoon Kim received the B.S. degree in electrical/electronics engineering from Kyungpook National University, Taegu, Korea, in 1997, the M.S. degree in communication engineering from the University of Southern California, Los Angeles, in 1999, and the Ph.D. degree in electrical engineering from the University of Wisconsin–Madison (UW–Madison), in 2006. In 2000, he was with the Samsung Electronics Company as a Research Engineer. In August 2002, he joined City College, City University of New York, as an Assistant Professor. Since March 2011, he has been with Kyungpook national university and is presently an associate professor. His research focuses on RF/microwave systems and circuits. In particular, he is interested in phase shifters and their applications using right- and left-handed nonlinear transmission lines



Jeongho Ju received the BS and MS on information and telecommunication engineering from Incheon University, Incheon, Korea, in 2006 and 2008, respectively. Since 2008 till January 2015, he was with ETRI, Daejeon, Korea, where he was an antenna and RF device research staff. Since February in 2015, he has worked on devising the methods and probes to characterize the electromagnetic fields and EMI of semiconductor chips and packages for SK Hynix. His research interests include passive components, filters, and antennadesign based on metamaterials.

TUTORIAL TU-02	Post-layout Check Procedure for Intel Server Customers
TIME	3:50pm – 5:50pm, Wednesday, May 18 th
VENUE	Rose 2
ORGANIZER	Y.L. Li, Intel Corporation Thonas Su, Intel Corporation
SPEAKERS	Y. L. Li, Intel Corporation Thonas Su, Intel Corporation Jimmy Hsu, Intel Corporation Yinglei Ren, Intel Corporation Nan Kang, Intel Corporation

◆ **ABSTRACT**

This tutorial is an introduction and overview of the latest CCT (channel check tool) and CNS (channel noise scan) post-layout check/debug by using simulation as well as the CQS (channel quality scan) in the lab for Intel® server platform. The tutorial will present the background and the procedure to reduce the design risk. After the “background” material is covered, 2 examples, one for CNS and one for CCT, based on real cases will be provided to help understanding the concept and the value of using simulation to improve the reliability and the performance of the Intel® server platform designs.

- ▶ **Out of Guideline (OOG) Support Strategy**
Dr. Y.L. Li, Principle Engineer, Intel
- ▶ **Channel Check Tool (CCT) for Post-layout Check**
Dr. Thonas Su, Staff Engineer, Intel
- ▶ **Channel Noise Scan (CNS) for Post-layout Debug**
Jimmy Hsu, Tech. Lead, Intel
- ▶ **Case Study: Power noise impact on SATA**
Yinglei Ren, Senior SI Engineer, Intel
- ▶ **Channel Quality Scan (CNS) for Debug**
Nan Kang, Senior Tech. Marketing Engineer, Intel

◆ BIOS OF SPEAKERS



Dr. Yuan-Liang Li received the Ph.D. degree in Electrical and Computer Engineering from University of Illinois at Urbana-Champaign, in 1991. He joined Intel Corporation, Chandler, Arizona, in 1996. He had led Signal Integrity, Power Delivery, & EMI teams in Intel. He is now a Principal Engineer of Data Center Group. His research interest lies in the area of high-speed design issues in Power Delivery, Signal Integrity, and EMI. He has published more than 20 journal papers, presented more than 100 articles in international conferences, and currently holds 60 patents.



Dr. Thomas Su received the B.S. and M.S. in Control Engineering from National Chiao-Tung University in 1994 and 1996, respectively. He worked for ALi/ULi from 1998 to 2006 and for NVIDIA from 2006 to 2009. He joined Intel Corporation as a signal integrity engineer in the Data Center Platform Application Engineer group focusing on signal integrity collateral delivering and customer support in 2009.



Mr. Jimmy Hsu received the B.S. and M.S. in Control Engineering from National Chiao Tung University in 1998 and 2000, respectively. He led SI/PI/EMI for VIA technologies from 2000 to 2008 and for Himax from 2008 to 2010, respectively. He joined Intel Corporation as a signal integrity platform application engineer for SI/PI customer enablement, support and technology development from 2010. His research interest lies in the area of high-speed design issues in power integrity, signal integrity, and EMI.



Mr. Yinglei Ren received her B.S. and M.S. degrees in electronics engineering from Shanghai Jiao Tong University, Shanghai, China in 2002 and 2005, respectively. She has been working as an SI engineer in Intel Data Center Group (DCG) since 2008. Her area of interests includes signal integrity and power integrity.



Mr. Nan Kang received the B.S. and M.S. in Precision Instrument & Opto-electronics Engineering from Tianjin University in 2005 and 2007, respectively. He worked for ZTE from 2007 to 2010 and for LSI from 2010 to 2011. He joined Intel as a signal integrity engineer in Data Center Group (DCG) and now support customer design focusing on signal integrity and electrical validation.

TUTORIAL TU-03	EMC Made Simple-Printed Circuit Board and System Design
TIME	1:30pm – 3:30pm, Wednesday, May 18th.
VENUE	Narcissus B
ORGANIZER	Mark Montrose, Montrose Compliance Services, Inc.
SPEAKERS	Mark Montrose, Montrose Compliance Services, Inc.

◆ ABSTRACT

This tutorial presents material related to the design of printed circuit boards and their integration into an enclosure to create a functional system that meets any EMC requirement, both emissions and immunity. The target audience is everyone regardless of expertise level who would like to learn electromagnetic theory in a unique non-academic manner –without the math”. The field of electrical engineering involves understanding simplified transmission line theory,

thinking in the time domain. An electromagnetic field (frequency domain) propagates down a transmission line between source and load. Any energy loss in the propagation path creates undesired common-mode noise, giving us job security. To present Maxwell Made Simple, a subset of EMC Made Simple, a visualization approach is taken that allows attendees to understand what Maxwell tells us, converting his four equations in integral and differential form conceptually into five simple algebraic equations to solve almost any EMC problem in minutes, using only a calculator.

◆ BIOS OF SPEAKERS



Mark Montrose is principle consultant of Montrose Compliance Services, Inc., USA, a full service regulatory compliance firm specializing in electromagnetic compatibility (EMC) with 35 years of applied, hands-on design experience as a practitioner. He is a professional trainer, consultant and design engineer in all aspects of EMC and authored five popular textbooks with numerous international translations. He is a current member of the IEEE EMC Society Board of Directors, past president and founder of the IEEE Product Safety Engineering Society, and past Division Director and member of the IEEE Board of Directors. He is an iNARTE Master EMC Design Engineer and provides consulting and training services worldwide in addition to being an ISO 17025 EMC Assessed Test Laboratory for in situ compliance of industrial products. His registered trademark and corporate tagline is “EMC Made Simple”, which also the title of his newest textbook.

TUTORIAL TU-04	The Role of the IEC Advisory Committee on EMC (ACEC) in Coordinating IEC EMC Activities
TIME	3:50pm – 5:50pm, Wednesday, May 18 th .
VENUE	Rose 3
ORGANIZER	Donald Heirman, Don HEIRMAN Consultants
SPEAKERS	Donald Heirman, Don HEIRMAN Consultants William Radasky, Metatech

◆ ABSTRACT

This Tutorial is intended to inform researchers in the field of EMC of the coordination of EMC standards and activities in the International Electrotechnical Commission (IEC) by the IEC Advisory Committee on EMC known as ACEC. The members of this committee include technical committees of the IEC that produce horizontal EMC basic standards for testing and measurement instrumentation, and also product committees that apply the basic standards along with specific test levels, performance criteria, and emission limits. On occasion there may be conflicts that require some compromise between different standards committees that have EMC aspects in their work. ACEC reviews the situation and recommends potential solutions or supports these compromises if suitable to the IEC Standardization Management Board (SMB) which ACEC reports to as the SMB manages the technical activity of all IEC technical committees. This workshop will review the major activities of ACEC and its members and will also describe an update of some of the hot topics in standardization today.

▶ **What is ACEC?**

Dr. William Radasky, Metatech, Goleta, California

▶ **Trends in CISPR and its Subcommittees**

Donald Heirman, Don HEIRMAN Consultants, Lincroft, New Jersey

▶ **Trends in TC77 (EMC) and its Subcommittees**

Dr. William Radasky, Metatech, Goleta, California

▶ **Emission Standardization in the 2 kHz to 150 kHz frequency band**

Dr. William Radasky, Metatech, Goleta, California

▶ **EMC for E-mobility**

Dr. William Radasky, Metatech, Goleta, California

▶ **Medical Electronics EMC**

Donald Heirman, Don HEIRMAN Consultants, Lincroft, New Jersey

▶ **Assessment of Human Exposure to electromagnetic fields**

Donald Heirman, Don HEIRMAN Consultants, Lincroft, New Jersey

◆ BIOS OF SPEAKERS



Donald Heirman is president of Don HEIRMAN Consultants, USA, founded in 1997 after 34 years with Bell Labs. It provides training and standards development in electromagnetic compatibility (EMC). His primary activity is in EMC measurement standardization where he has worked for over 50 years.

Don is a member of the IEEE EMC Society Board of Directors, chair of its measurements committee, and chair of its special committee on Smart Grid. He is chairman of the International Electrotechnical Commission (IEC) International Special Committee on Radio Interference (CISPR) and chairman of the IEC Advisory Committee on EMC (ACEC). He was awarded the IEC Lord Kelvin Award in 2008 for his outstanding contribution to international standardization. He also chairs the US Smart Grid Interoperability Panel working group on electromagnetic interoperability issues.

Mr. Heirman is a life member and life Fellow of the IEEE and has presented numerous workshops, tutorials, and technical papers.



Dr. William A. Radasky received his Ph.D. in electrical engineering from the University of California at Santa Barbara in 1981. He has worked on high power electromagnetic applications for more than 47 years and has published more than 480 reports, papers and articles dealing with electromagnetic environments, effects and protection during his career. In recent years, he has worked extensively in performing assessments and designing protection for the critical infrastructures to the threats of HEMP, IEMI and severe geomagnetic storms. In addition he is active in U.S. Smart Grid activities.

Dr. Radasky is very active in the field of electromagnetic compatibility (EMC) standardization; in 2004 he received the Lord Kelvin Award from the IEC for outstanding contributions to international standardization. He is an IEEE Life Fellow and a registered professional engineer in electric engineering. He founded Metatech Corporation in 1984 in California and is the President and Managing Engineer.

TUTORIAL TU-05	EM Functional Safety
TIME	3:50pm – 5:50pm, Thursday, May 19 th
VENUE	Rose 2
ORGANIZER	Keith Armstrong, Cherry Clough Consultants
SPEAKERS	Keith Armstrong, Cherry Clough Consultants

◆ ABSTRACT

For the vast majority of safety-related electronic systems, no practical immunity test plan can, on its own, provide sufficient confidence that the system will remain Functionally Safe throughout its entire lifecycle, with regard to electromagnetic disturbances. This proposed Tutorial describes the cost-effective approach developed by the Institution of Engineering and Technology (IET, which used to be the IEE), London, U.K., which was first published in 2013 and is the subject of a new IET Code of Practice on “Electromagnetic Resilience for Functional Safety”. This approach is now the basis of two new IEC standards, and the subject of a new IEEE Standard: “Managing Risks with Regard to Electromagnetic Disturbances”.

- ▶ **Introduction to Functional Safety engineering**
- ▶ **How to do EMC for Functional Safety?**
- ▶ **Why no immunity test plan can prove that functional safety risks are acceptable**
- ▶ **Overview of practical approaches: BGB and EMI Resilience**
- ▶ **Overviews of EMI Resilience T&Ms**
- ▶ **Developments in related IEC and IEEE standards**
- ▶ **Special problems with the medical EMC standard IEC 60601-1-2**

◆ BIOS OF SPEAKERS



Keith Armstrong Keith graduated from Imperial College, London, in 1972 with an Honours Degree in Electrical Engineering. He has been a member of the IEE/IET since 1977 and a member of the IEEE since 1997. Appointed as a Fellow of the IET and a Senior Member of the IEEE in 2010. After working as an electronic designer, project manager and design department manager, Keith started Cherry Clough Consultants, UK, in 1990 to help companies reduce financial risks and project timescales through the use of proven good EMC engineering practices.

Over the last 25 years, Keith has provided design consultancy and training courses to over 800 customers worldwide, presented many papers and published many articles and three textbooks, on good EMC engineering practices and also on the Risk Management of Electromagnetic Disturbances (sometimes called EMC for Functional Safety).

TUTORIAL TU-06	Smart Grid Support and EMC Issues
TIME	3:50pm – 5:50pm, Thursday, May 19 th
VENUE	Narcissus B
ORGANIZER	Donald Heirman, Don HEIRMAN Consultants
SPEAKERS	Donald Heirman, Don HEIRMAN Consultant Dr. William Radasky, Metatech Prof. Dave Thomas, The University of Nottingham

◆ ABSTRACT

Smart Grid continues to be a hot topic worldwide with no end in sight. This tutorial will review the latest Smart Grid (SG) EMC activities of key organizations and an example of a SG EMC working on the topic. The focus will be on the EMC implications including what are being accepted and what are not. It will discuss what EMC compatibility level is desirable for all grid connected devices, especially those that are part of the communication channel passing power usage data and use in both directions. The communications challenge is in the frequency range 2 kHz to 150 kHz. The tutorial will also give a specific example of the immunity needed for SG devices used in power station and substation environments. Finally the tutorial will place in perspective the EMC status and the work still needed to be done to make it an integral part of the Smart Grid roll out.

▶ Immunity for power station and substation environments

Dr. William Radasky, Metatech, Goleta, California

▶ US Smart Grid Interoperability Panel (SGIP 2.0) and its Testing and Certification Committee

Donald Heirman, Don HEIRMAN Consultants, Lincroft, New Jersey

▶ Application of selected EMC Standards by the SGIP Electromagnetic Interoperability Issues Working Group (EMIWG)

Donald Heirman, Don HEIRMAN Consultants, Lincroft, New Jersey

EMC between communications circuits and power systems in the frequency range 2 kHz to 150 kHz

Prof. David Thomas, University of Nottingham, Nottingham

◆ BIOS OF SPEAKERS



Donald Heirman is president of Don HEIRMAN Consultants, USA, founded in 1997 after 34 years with Bell Labs. It provides training and standards development in electromagnetic compatibility (EMC). His primary activity is in EMC measurement standardization where he has worked for over 50 years.

Don is a member of the IEEE EMC Society Board of Directors, chair of its measurements committee, and chair of its special committee on Smart Grid. He is chairman of the International Electrotechnical Commission (IEC) International Special Committee on Radio Interference (CISPR) and chairman of the IEC Advisory Committee on EMC (ACEC). He was awarded the IEC Lord Kelvin Award in 2008 for his outstanding contribution to international standardization. He also chairs the US Smart Grid Interoperability Panel working group on electromagnetic interoperability issues.

Mr. Heirman is a life member and life Fellow of the IEEE and has presented numerous workshops, tutorials, and technical papers.



Dr. William A. Radasky received his Ph.D. in electrical engineering from the University of California at Santa Barbara in 1981. He has worked on high power electromagnetic applications for more than 47 years and has published more than 480 reports, papers and articles dealing with electromagnetic environments, effects and protection during his career. In recent years, he has worked extensively in performing assessments and designing protection for the critical infrastructures to the threats of HEMP, IEMI and severe geomagnetic storms. In addition he is active in U.S. Smart Grid activities. Dr. Radasky is very active in the field of electromagnetic compatibility (EMC) standardization; in 2004 he received the Lord Kelvin Award from the IEC for outstanding contributions to international standardization. He is an IEEE Life Fellow and a registered professional engineer in electric engineering. He founded Metatech Corporation in 1984 in California and is the President and Managing Engineer.



Prof. Dave Thomas is a Professor of Electromagnetics Applications and Director of The George Green Institute for Electromagnetics Research, The University of Nottingham UK. His research interests are in electromagnetic compatibility, electromagnetic simulation, power system transients and power system protection. He is a member of CIGRE and convenor for Joint Working Group C4.31 –“EMC between communication circuits and power systems”. He is also Chair for the IEEE EMC Technical committee T7 on Low Frequency EMC, Chair and budget holder of COST Action IC 1407 –“Advanced Characterisation and Classification of Radiated Emissions in Densely Integrated Technologies (ACCREDIT)”. He is also member of several conference steering committees including the EMC Europe International Steering Committee and the ESA Workshop on Aerospace EMC.

TUTORIAL TU-07	Paper Writing Skills for IEEE Transactions
TIME	3:50pm – 5:50am, Friday, May 20 th
VENUE	Narcissus B
ORGANIZER	Professor John Norgard, NASA/JSC, Houston Professor Perry Wilson, NIST, Boulder
SPEAKERS	Professor John Norgard, NASA/JSC Professor Perry Wilson, NIST

◆ **ABSTRACT**

This workshop is on the IEEE Electromagnetic Compatibility Transactions (EMCT).

1. Presentations on EMCT include:
2. How to publish a paper in the EMCT.
3. How to prepare and write a good technical paper for the EMCT.

The presentation for part i), by Prof. Norgard, entitled –“Publishing a Paper in the EMCT”, will cover the submission process, the review cycle (Reviewers, Associate Editors, and the Editor-in-Chief), and final paper publication procedures for the IEEE Transactions on EMC. In addition, acceptance criteria are covered, along with style guides, on-line web support and help-aids, and proper paper organization, with examples of accepted papers.

The presentation for part ii), by Prof. Wilson, entitled ”Writing a Good EMCT Paper: My Perspective” will cover aspects of writing a good paper for submission to the IEEE Transactions on EMC. Covered will be goals, hints, and dos and don’ts for the abstract, index terms, main text, and conclusions of a paper. The material is very much from the personal perspective of the presenter based on his experience as both a reviewer and a former Editor-in-Chief of the Transactions.

This EMCT workshop is intended for everyone interested in publishing a paper in the EMCT, especially for the first time.

- ▶ **Publishing a Paper in the EMCT**
- ▶ **Professor John Norgard, NASA/JSC, Houston, TX**
- ▶ **Writing a Good EMCT Paper: My Perspective**
- ▶ **Professor. Perry Wilson, NIST, Boulder, CO**

◆ BIOS OF SPEAKERS



Professor John Norgard received the BSEE degree from Georgia Tech and MS and PhD degrees in Applied Physics from Caltech. Prof Norgard was the Dean of the EAS College, Chair of the MAE Department, and Chair of the ECE Department at the University of Colorado. Before coming to the University, he was a Professor in the ECE Department at Georgia Tech and was a Post-Doctoral Fellow at the Norwegian Defense Research Establishment in Oslo, Norway. He has also served as an Adjunct Professor at Syracuse University and at the University of Houston. He worked at NASA/JPL while studying at Caltech, and was a Co-Op student at Georgia Tech while working at the Charleston Naval Shipyard and Polaris Submarine Base.

Professor Norgard is a Fellow of IEEE, on the Board of Directors of the EMC Society, on the Board of Directors for ACES, past member of the Board of Physics and Astronomy for NAS and NRC, Past Chairman for Commission A/Metrology of URSI, and an Associate Editor of the EMC Transactions in the area of antenna metrology.

Professor Norgard has authored several hundred journal articles and conference papers and is the author of several chapters in four electromagnetic books.



Perry F. Wilson (S'78-M'82-SM'93-F'05) received his Ph.D. in Electrical Engineering from the University of Colorado in 1983. He currently leads the RF Fields Group in the RF Technology Division of the National Institute for Standards and Technology, in Boulder, Colorado. Professor Wilson's research has focused on the application of electromagnetic theory to problems in electromagnetic compatibility and RF field metrology.

Professor Wilson is a Fellow of the IEEE, a member of US IEC TC77B TAG, past Editor-in-Chief of the IEEE EMC Transactions, a recipient of a 2010 IEEE EMC Society Technical Achievement Award, a recipient of the 2002 IEEE EMC Transactions Best Paper Award, and a recipient of a 2007 US Department of Commerce Gold Medal.

TUTORIAL TU-08	Correct Calibration and Application of Dipole-like Antenna Factors
TIME	03:50pm – 05:50pm, Saturday, May 21 st
VENUE	Rose 3
ORGANIZER	Dr. Donglin Meng, National Institute of Metrology
SPEAKERS	Dr. Donglin Meng, National Institute of Metrology Jung-Chun Tsai, Electronics Testing Center Professor Weilong Wang, National Institute of Metrology

◆ ABSTRACT

Antenna factor is widely used in radiated electromagnetic interference (EMI) measurement, however, there are many misunderstandings or puzzlements about the accuracy and application of the antenna factor during radiated emission measurements. Here is one typical opinion: the antenna factor used in a 3 m range EMI measurements must be calibrated at 3 m separation. Another one: if there is any difference between calibration data and manufacturer datasheet, whom should we believe in? There is another subtle doubt: since the antenna factor of a dipole-like antenna in a reverberation chamber or in a semi-anechoic chamber will be different from the free-space antenna factor, how the antenna factor calibrated in one specific environmental can be used in another environmental?

This tutorial provides a deep insight into the characteristics of dipole-like antennas, their calibrations and applications, the design, construction and validation of a metrological open-area test site of high performance. Not only the conclusions from standards CISPR 16-1-6, ANSI C63.5 and ANI C63.4, but also some studies made by the speakers are presented. Attenders are welcome to interact with the speakers, especially if you have different opinions.

In short, this workshop will be so interesting that if you have good idea or good questions, you are welcome to discuss it with the speakers.

- ▶ **The accurate calibration and application of dipole-like antenna factors**
Dr. Donglin Meng, National Institute of Metrology
- ▶ **New Requirement for VSWR & Symmetry of Hybrid Antenna from ANSI C 63.4-2014**
Jung-Chun Tsai, Electronics Testing Center
- ▶ **The calibration and application of Rod antennas in EMC**
Professor Weilong Wang, National Institute of Metrology

◆ **BIOS OF SPEAKERS**



Dr. Donglin Meng, associate professor, was born in Yunan Province, China in 1973. He has been with National Institute of Metrology since 2008. He was a visiting scholar to NPL from Jan. 2009 to June 2010. He has been an expert of CISPR/A WG1 since 2012. Now, he is technically in charge of a Measurement Standard for Public Service: Standard Facility of Antenna Measurement Based on ground-reflection range. He is one of the key contributors to the design, construction and validation of a large metrological Open-area Test Site; He is also the contributor to the design and manufacturing of a pair of precise calculable dipole and calculable biconical antennas. He also contributes to the antenna extrapolation range facility for horn antenna calibration from 250 MHz to 110 GHz, and to the National Specification of Antenna Calibration from 30 MHz to 1GHz in China.



Jung-Chun Tsai received the Bachelor degree in Electronic Engineering from National Taiwan University of Science and Technology in 1991, Taipei, Taiwan. Since 1991 he has been with the Electromagnetic Compatibility Department and Measurement and Calibration of Technology Department, Electronics Testing Center, Taiwan (ETC). His research interests include, EMC measurement method and standard improvement, RF high power meter calibration technology, Antenna calibration technology, site validation include NSA and Site VSWR method technology.



Professor Wang Weilong, born in 1964, has been with National Institute of Metrology, China since 1997. He has been employed as a professor in NIM since 2011. From 1997 to present, he has devoted to EMC Horn Antenna Calibration. He is the key contributor to some national calibration specification, such as “Calibration Specification for (0.2~40)GHz Electromagnetic Compatibility Horn Antennas”, “Calibration Specification for 9 kHz ~ 30 MHz Rod Antennas”, “Calibration specification for harmonic and flicker testing system for EMC” , “Calibration specification for 30 MHz ~ 1000 MHz Absorbing Clamp”. He is an active member of CISPR/D, CISPR-25. He contributes to the draft document “Annex J (informative) ALSE Performance Validation 150 kHz – 1 GHz in EMC measurements”.

OVERVIEW OF WORKSHOPS

WORKSHOP WS-01	EMC in Wireless Devices
TIME	8:40am – 10:20am, Wednesday, May 18 th
VENUE	Rose 1
ORGANIZER	Jun Fan, Missouri University of Science and Technology David Pommerenke, Missouri University of Science and Technology
SPEAKERS	Jun Fan, Missouri University of Science and Technology David Pommerenke, Missouri University of Science and Technology HarkByeong Park, Global technology Center, Samsung Electronics

◆ ABSTRACT

Emerging wireless technologies have greatly impacted our daily lives. Due to the high-density and mixed digital/analog design in typical wireless devices such as cellular phones, EMC-related issues present significant challenges to ensure the normal operation of the devices. This workshop will cover a few of the main design issues such as electro-static discharge (ESD), radio-frequency interference (RFI), receiver desensitization, modulation and intermodulation, shielding solutions, etc. Noise coupling physics, modeling approaches, counter-measures and more will be included in the planned topics.

► Receiver desensitization due to radio-frequency interference and LCD modulation

Professor Jun Fan, Missouri University of Science and Technology

► Large-scale ESD modeling

Professor David Pommerenke, Missouri University of Science and Technology

► Evaluation of shielding can effectiveness for near-field coupling using dipole moments

HarkByeong Park, Samsung Electronics

◆ BIOS OF SPEAKERS



Dr. Jun Fan (S'97-M'00-SM'06-F'16) received his B.S. and M.S. degrees in Electrical Engineering from Tsinghua University, Beijing, China, in 1994 and 1997, respectively. He received his Ph.D. degree in Electrical Engineering from the University of Missouri-Rolla in 2000. From 2000 to 2007, he worked for NCR Corporation, San Diego, CA, as a Consultant Engineer. In July 2007, he joined the Missouri University of Science and Technology (formerly University of Missouri-Rolla), and is currently an Associate Professor. Dr. Fan is the Director of the Missouri S&T EMC Laboratory and the Director of the National Science Foundation Industry/University Cooperative Research Center for EMC. His research interests include signal integrity and EMI designs in high-speed digital systems, dc power-bus modeling, intra-system EMI and RF interference, PCB noise reduction, differential signaling, and cable/connector designs. Dr. Fan served as the Chair of the IEEE EMC Society TC-9 Computational Electromagnetics Committee from 2006 to 2008, and was a Distinguished Lecturer of the IEEE EMC Society in 2007 and 2008. He currently serves as the Chair of the Technical Advisory Committee of the IEEE EMC Society, and is an associate editor for the IEEE Transactions on Electromagnetic Compatibility and EMC Magazine. Dr. Fan received an IEEE EMC Society Technical Achievement Award in August 2009.



Dr. David Pommerenke research interests are system level ESD, electronics, numerical simulations, EMC measurement methods and instrumentations. He received the Ph.D. from the Technical University Berlin, Germany in 1996. After working at Hewlett Packard for 5 years he joined the Electromagnetic Compatibility Laboratory at the Missouri University of S&T in 2001 where he is professor. He has published more than 200 papers and is inventor on 13 patents. His main research interests are measurement/instrumentation ESD, and EMC. He is IEEE member and associated editor for the IEEE Transactions on EMC. He is IEEE Fellow.



Hark-Byeong Park received the B.S. degree in nuclear engineering and the M.S. degree in electrical engineering from the Hanyang University, Seoul, Korea, in 1990 and 1992, respectively. From 1993 to 2001, he worked for LG Electronics, Pyungtaek, Korea, as a senior engineer. In December 2001, he joined Samsung Electronics, Suwon, Korea, and is currently a Principal Engineer. For 24 years, he has been practicing EMI/SI design guides for mobile, home appliance, multimedia products with system/module/IC designers. His research interest includes the advanced EMC/SI technology for future products in high speed and wireless trends, especially the design methodology to reduce RFI/EMI noise in design stage, measurement technology to sense the very low level noise to interfere with RF communication, and IC/module/system co-design methodology for device and system engineers to cooperate effectively. He is an organizer of the Samsung EMC Association and an IEEE Senior Member.

WORKSHOP WS-02	Computational Electromagnetics and Multiphysics Methods for Solving Complex EMC Problems
TIME	8:40am – 3:30pm, Wednesday, May 18 th
VENUE	Rose 2
ORGANIZER	Wen-Yan Yin, Zhejiang University Haijing Zhou, Institute of Computational Physics and Applied Mathematics, CAS
SPEAKERS	Professor Zhizhang (David) Chen, IEEE Fellow and CAE Fellow, The University of Electronic Science and Technology of China & Dalhousie University of Canada. Professor Haijing Zhou, Institute of Applied Physics and Computational Mathematics; Software Center for High Performance Numerical Simulation, CAEP Professor Lixin Guo, School of Physics and Optoelectronic Engineering, Xidian University Professor Gaofeng Wang, Hangzhou Dianzi University. Professor Mingyao Xia, Peking University Professor Tie Jun Cui, Southeast University Professor Lihua Shi, PLA University of Science and Technology. Professor Wen-Yan Yin, Zhejiang University

◆ ABSTRACT

Computational Electromagnetics (EM) and Multiphysics (MP) methods for EMC applications remain very challenging tasks even with nowadays. This workshop hosts a series of speakers that have made recent contributions to the field of computational EM/MP methods applied to problems relevant to various complex EMC/EMI problems. The presentations will give both a review of the state of the art in the respective fields and show more recent progress. Topics that will be addressed include general computational EM/MP methods, numerical efficiency and accuracy, handling of complex 3-D multiscale structures, validation of simulation results, and even high performance computational EM/MP methods and their applications for characterizing very complex electromagnetic environment effects. All these are very important for the development of warship- and aircraft-based platforms as well as new generation wireless communication systems. The workshop is provided for both research engineers and scientists who are active in CEM and EMC/EMI studies and applications.

- ▶ **Electromagnetic Modeling for Communication Systems and Devices**
Professor Zhizhang (David) Chen, UESTC & Dalhousie University of Canada
- ▶ **High Performance Computing Method for Fast Simulating Complex Electromagnetic Environment Effects**
Professor Haijing Zhou, Institute of Applied Physics and Computational Mathematics, Beijing; Software Center for High Performance Numerical Simulation, CAEP, Beijing
- ▶ **Study on the Interaction Mechanism of Electromagnetic Waves with Plasma Sheath and Electromagnetic Scattering Modeling of Hypersonic Aircrafts in the Near-Space**
Professor Lixin Guo, School of Physics and Optoelectronic Engineering, Xidian University, Xi'an
- ▶ **High-Capacity Full-Wave Electromagnetic Solvers for RFICs: Past, Present, and Future**
Professor Gaofeng Wang, Hangzhou Dianzi University, Hangzhou
- ▶ **Time Domain Method for Simulation of Scattering from Oceanic Surface with Ship Wake**
Professor Mingyao Xia, Peking University, Beijing
- ▶ **High Performance Numerical Analysis of Multi-Physics Interactions and Its Applications**
Professor Tie Jun Cui, School of Information Science and Technology, Southeast University, Nanjing
- ▶ **Solving Maxwell's Equations by Orthogonal Decomposition with AH Function**
Professor Lihua Shi, Lab of E3OE, PLA University of Science and Technology
- ▶ **Computational Multiphysics Method for Characterizing Electro- Thermo- Stress Effects of Semiconductor Devices in the Presence of an Intentional Electromagnetic Interference**
Professor Wen-Yan Yin, College of Information Science and Electronic Engineering, Zhejiang University, Hangzhou

◆ BIOS OF SPEAKERS



Zhizhang (David) Chen received the B. Eng. degree from Fuzhou University of China, the M.A.Sc. degree from Southeast University of China, the Ph.D. degree from the University of Ottawa of Canada, and was a NSERC post-doctoral fellow with the ECE Department of McGill University, Montreal, Canada. He holds an adjunct faculty position with the University of Electronic Science and Technology of China and is a professor with the Department of Electrical and Computer Engineering, Dalhousie University, Halifax, Nova Scotia, Canada. Dr. Chen has authored and coauthored over 300 journal and conference papers in computational electromagnetics, RF/microwave electronics and wireless systems. He has served on various IEEE society committees, numerous conference committees and guest editors of special issues of professional journals. He was the Chair of IEEE Atlantic Section and founder/chair of its joint Signal Processing and Microwave Theory and Technique Chapter. He received the 2005 Nova Scotia Engineering Award, a 2006 Dalhousie graduate teaching award, the 2007 Dalhousie Faculty of Engineering Research Award, and 2013 IEEE Canada Fessenden Medal. He is a Fellow of the IEEE and the Canadian Academy of Engineering. His current research interests include numerical time-domain modeling and simulation, RF/microwave electronics, smart antennas, ultra- wideband and wireless transceiving technology and applications.



Zhou Haijing received his B.S, M.S, and Ph.D. degrees from the University of Electronic Science and Technology of China in 1991, 1994, and 1997, respectively.

In 1998, he joined the Institute of Applied Physics and Computational Mathematics (IAPCM) in Beijing, as an assistant professor. He has been promoted to be the Associate Professor and Professor in 2000 and 2005, respectively. During these years, his research is mainly focused in the areas of high power microwave systems and effects, transient electromagnetics theory, and high-performance computing methods and applications.

In recent years, he has been the principal investigator of several projects of high-performance computational electromagnetics and applications, where the main target is to develop some simulation platforms with high parallelization efficiency and capability for fast and accurately solving various E3 problems with ultra-large scale.



Lixin Guo received the M.S. degree in Radio Science from Xidian University, Xi'an, China, and the Ph.D degree in Astrometry and Celestial Mechanics from Chinese Academy of Sciences, China, in 1993 and 1999, respectively. During 2001-2002 he was a visiting scholar at School of Electrical Engineering and Computer Science, Kyungpook National University, Korea. He has also held appointments as visiting professor at d'Energetique des Systemes et Precedes (LESP), University of Rouen, France and Faculty of Engineering and Physical Sciences, University of Manchester, England. He is currently a professor and head of School of Physics and Optoelectronic Engineering Science at Xidian University, China. He has been a Distinguished Professor of Changjiang Scholars Program since 2014. Dr. Guo has authored and coauthored 4 books and over 300 journal papers. He has been in charge of and undertaken more than 30 projects. He was a recipient of the National Science Fund for Distinguished Young Scholars in 2012. His research interests mainly include: electromagnetic wave propagation and scattering in complex system, computational electromagnetics and fractal electrodynamics.



Gaofeng Wang received the Ph.D. degree in electrical engineering from the University of Wisconsin, Milwaukee, in 1993 and the Ph.D. degree in scientific computing from Stanford University, Stanford, California, in 2001.

From 1993 to 1996, he was a Scientist at Tanner Research Inc., Pasadena, CA. From 1996 to 2001, he was a Principal Research and Development Engineer at Synopsys Inc., Mountain View, CA. In the summer of 1999, he served as a Consultant at Bell Laboratories, Murray Hill, NJ. From 2001 to 2003, he was Chief Technology Officer (CTO) at Intpax, Inc., San Jose, CA. From 2004 to 2010, he was CTO at Siargo Inc., Santa Clara, CA. From 2010 to 2013, he was Chief Scientist at Lorentz Solution, Inc., Santa Clara, CA. From 2004 to 2013, he was also Adjunct Professor and Founding Director at the Institute of Microelectronics & Information Technology, Wuhan University, Hubei, China. He is currently a Distinguished Professor at the School of Electronics and Information, Hangzhou Dianzi University, Zhejiang, China.

He has over 280 publications and is the holder of over 20 patents. His research and development interests include integrated circuit (IC) and microelectromechanical system (MEMS) designs, computational electronics, computational electromagnetics, electronic design automation (EDA), and wavelet applications in engineering.



Ming-Yao Xia received the Master and Ph.D. degrees in electrical engineering from the Institute of Electronics, Chinese Academy of Sciences (IECAS), Beijing, China, in 1988 and 1999, respectively. From 1988 to 2002, he was with IECAS as an Engineer and a Senior Engineer. He was a Visiting Scholar at the University of Oxford, U.K., from October 1995 to October 1996. From June 1999 to August 2000 and from January 2002 to June 2002, he was a Senior Research Assistant and a Research Fellow, respectively, with the City University of Hong Kong. He joined Peking University (PKU) as an Associate Professor in 2002 and was promoted to Full Professor in 2004. He moved to the University of Electronic Science and Technology of China, Chengdu, China, as a Chang-Jiang Professor nominated by the Ministry of Education of China in 2010. He returned to PKU after finishing the appointment in 2013. He has been a Senior Member of IEEE since 2003, and currently he is an Associate Editor of IEEE Transactions on Antennas and Propagation. He was the recipient of the Young Scientist Award of the URSI in 1993. He was awarded the first-class prize on Natural Science by the Chinese Academy of Sciences in 2001. He was the recipient of the Foundation for Outstanding Young Investigators presented by the National Natural Science Foundation of China in 2008. His research interests include computational electromagnetics, wave propagation and scattering, microwave scattering remote sensing, antennas and microwave components, electromagnetic probing and imaging.



Tie Jun Cui (M'98–SM'00–F'15) received the B.Sc., M.Sc., and Ph.D. degrees in electrical engineering from Xidian University in 1987, 1990, and 1993, respectively. Currently, he is the Associate Dean with the School of Information Science and Engineering, and the Associate Director of the State Key Laboratory of Millimeter Waves. From 2013, he has been a Representative of People's Congress of China. He has been a Humboldt Research Fellow with the Institut für Hochfrequenztechnik und Elektronik at the University of Karlsruhe, Germany. In July 1997, he joined the Center for Computational Electromagnetics, Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, first as a Postdoctoral Research Associate and then a Research Scientist.

Dr. Cui is a Co-Editor of the book *Metamaterials – Theory, Design, and Applications* (Springer, Nov. 2009), the author of six book chapters. He has published over 300 peer-review journal papers. His research interests include metamaterials, computational electromagnetic, wireless power transfer, and millimeter wave technologies, which have been cited by more than 10000 times. He received numerous awards including Cheung Kong Professor from the Ministry of Education, China, the National Science Foundation of China for Distinguished Young Scholars, the First Prize of Natural Science from Ministry of Education, China, and etc.

Dr. Cui is an IEEE Fellow, was an Associate Editor in IEEE Transactions on Geoscience and Remote Sensing and a Guest Editor in *Science China – Information Sciences*. He served as an Editorial Staff in IEEE Antennas and Propagation Magazine, and is in the editorial boards of *Progress in Electromagnetic Research (PIER)* and *Journal of Electromagnetic Waves and Applications*. He served as General Co-Chair of the International Workshops on Metamaterials (META'2008, META'2012), TPC Co-Chair of Asian Pacific Microwave Conference (APMC'2005) and Progress in Electromagnetic Research Symposium (PIERS'2004).



Lihua Shi received his B.S.E.E degree from Xidian University, Shanxi, China, in 1990, his M.S. degree from Nanjing Engineering Institute (NJEI), Jiangsu, China, in 1993, and his Ph.D degree from Nanjing University of Aeronautics and Astronautics, Jiangsu, China in 1996. From 1997 to 1998, he served as a post doctoral researcher in NJEI. From 2001 to 2002, he worked in Stanford University as a visiting scholar. He is currently a professor and the associate director in the Key Laboratory on Environmental Electromagnetic Effects and Electro-optic Engineering, PLA University of Science and Technology, with his main focus on electromagnetic pulse(EMP) protection and signal processing techniques. He is also a member of EMC committee and a senior member of Chinese Institute of Electronics. He has published over 150 technical papers and coauthored 3 books. In 2010, he was elected as an EMP fellow by Summa Foundation, U.S.A, for his contribution to measurement and signal processing technology of EMP.



Wen-Yan Yin (M'99–SM'01–F'13) received the M.Sc. degree in electromagnetic field and microwave technique from Xidian University, Xi'an, China, in 1989, and the Ph.D. degree in electrical engineering from Xi'an Jiao Tong University, Xi'an, in 1994. From 1993 to 1996, he was an Associate Professor with the Department of Electronic Engineering, Northwestern Polytechnic University, Xi'an, China. From 1996 to 1998, he was a Research Fellow with the Department of Electrical Engineering, Duisburg University, Duisburg, Germany, granted by the Alexander von Humboldt-Stiftung, Bonn, Germany. Since Dec. 1998 to Oct. 2005, he has been with the National University of Singapore (NUS) as a Research Scientist. Since April 2005, he has been a Professor in electromagnetic fields and microwave techniques with the School of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, Shanghai, China. Now, he is also the Adjunct Professor and Ph.D. Candidate Supervisor with the Center for Microwave and RF Technologies of SJTU. In January 2009, he joined the Zhejiang University, Hangzhou, China, as a "Qiu Shi" Distinguished Professor. As the leading author, he has authored and coauthored more than 230 international journal articles (more than 130 IEEE papers).

Dr. Wen-Yan Yin is the IEEE Fellow since 2013, the Associate Editors of IEEE Transactions on Components, Packaging and Manufacturing Technology and International Journal of Electronic Networks, Devices and Fields, respectively.

WORKSHOP WS-03	Advances in Automotive EMC Test and Measurements
TIME	10:40am – 12:20pm, Wednesday, May 18 th
VENUE	Rose 1
ORGANIZER	Janet O'Neil, ETS-Lindgren Yulung Tang, ETS-Lindgren
SPEAKERS	Yulung Tang, ETS-Lindgren Flavia Grassi, Politecnico di Milano Zhong Chen, ETS-Lindgren Joungho Kim, KAIST

◆ ABSTRACT

Vehicle platforms continue to become increasingly more complex with propulsion, entertainment and safety related systems all having to function reliably without impacting safety or the legacy communications infrastructure. In this workshop, industry experts will share their latest research in automotive EMC. They will address current and future requirements brought on by the increasing use of electronic components as well as the increased demand for electric and hybrid vehicles. This has driven the need for ever increasing permutations of system operation, operating frequency ranges and immunity levels. This will be discussed in light of current EMC test chamber design and test challenges. Basic principles and practical implementation of alternative test procedures aimed at assessing the immunity of units and sub-systems interconnected by a wiring harness will be discussed. With the new developments in absorber technologies, which is often a costly necessity for full vehicle testing, strategies for absorber placement and type used to maximize performance while minimizing cost, will be shared. The workshop concludes with a review of how digital switching devices with a wide range of switching frequencies can interfere with sensors, ADC, audio/video systems as well as wireless communication systems such as AM/FM radio, WiFi and LTE in modern vehicles. Moreover, the strong high-frequency resonant magnetic fields for wireless power transfer can also create EMI problems. Efficient modeling, simulation, and measurement methodologies of the EMI problems in automotive vehicles will be presented with design methods to minimize the EMI problems.

- ▶ **EMC Chamber Design and Test Challenges for E-Vehicles and Electronic Sub-Assemblies (ESA)**
Yulung Tang, ETS-Lindgren, Taipei
- ▶ **Alternative Approaches to Assess the Radiated Susceptibility of Units and Sub-systems Onboard Vehicles**
Professor Flavia Grassi, Politecnico di Milano, Milan
- ▶ **Use of New Absorber Materials and Placement Strategies for Effective EMC and Antenna Pattern Full Vehicle Testing**
Zhong Chen, ETS-Lindgren, Cedar Park, Texas
- ▶ **Modeling, Simulation, and Measurement of Electromagnetic Interferences in Automotive Electric Vehicles**
Professor Joungho Kim, Department of Electrical Engineering, KAIST (Korea Advanced Institute of Science and Technology)

◆ BIOS OF SPEAKERS



Janet O'Neil is a customer relation 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 as well as of the Antenna Measurement Techniques Association (AMTA). She is also a member of Subcommittee 1 (Techniques and Development) of ANSI ASC C63®, and 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; and Publications Chair for the IEEE International Microwave Symposium (IMS) 2013 in Seattle, Washington. 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.



Yulung Tang received his M.S. in Electrical Engineering from California Institute of Technology in 2004. During his studies in school, he conducted research work on the MMIC development for radio astronomy applications, as well as mmW point-to-point communication systems. He joined TriQuint Semiconductor in 2005 as a design engineer, working on the MMIC development for wireless communication systems. Since 2008, he has been with ETS-Lindgren and working on RF design of the anechoic chamber and antenna measurement system. His interest of research is focused on RF circuit and system design for radio astronomy, electromagnetic wave measurement and medical applications.



Flavia Grassi (M'07–SM'13) received the M.S. and Ph.D. degrees in electrical engineering from Politecnico di Milano, Milan, Italy, in 2002 and 2006, respectively, where she is currently an Assistant Professor with the Department of Electronics, Information and Bioengineering. From 2008 to 2009, she was with the Electromagnetics and Space Environment Division of ESA's European Space Research and Technology Centre (ESTEC), Noordwijk, the Netherlands. Her research interests include distributed-parameter circuit modeling for interference prediction, characterization of measurement setups for EMC testing (mainly for the aerospace and automotive sectors), statistical techniques, and application of the powerline communications technology on ac and dc lines. In 2008, she was awarded the URSI Young Scientist Award by the XXIXth URSI General Assembly. In 2015, she was recipient of the Best Symposium Paper Award at the 2015 Asia-Pacific International Symposium on EMC (APEMC).



Mr. Zhong Chen is the Director, RF Materials at ETS-Lindgren, located in Cedar Park, Texas. He has more than 18 years of experience in RF testing 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 test site validation standards. He is chairman of the IEEE 1309 committee for developing calibration standards for field probes. 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.



Dr. Joungho Kim received B.S. and M.S. degrees in electrical engineering from Seoul National University, Seoul, Korea, in 1984 and 1986, respectively, and Ph.D degree in electrical engineering from the University of Michigan, Ann Arbor, in 1993. In 1994, he joined Memory Division of Samsung Electronics, where he was engaged in Gbit-scale DRAM design. In 1996, he moved to KAIST (Korea Advanced Institute of Science and Technology). He is currently professor at electrical engineering department of KAIST. Also, he is director of 3DIC-RC (3DIC Research Center) supported by SK Hynix Inc, and SAE-RC (Smart Automotive Electronics Research Center) supported by KET Inc. Since joining KAIST, his research centers on EMC modeling, design, and measurement methodologies of 3D IC, TSV, Interposer, automotive vehicles, and wireless power transfer (WPT) technologies. He has authored and co-authored over 480 technical papers published at refereed journals and conference proceedings. Also, he has given more than 263 invited talks and tutorials at the academia and the related industries. Recently, he published a book, "Electrical Design of Through Silicon Via," by Springer in 2014. Dr. Joungho Kim was Conference chair of IEEE EDAPS 2015 in Seoul, and Joint conference chair of Japan-Korea Microwave society in 2015. He also was the conference chair of IEEE WPTC (Wireless Power Transfer Conference) 2014, held in Jeju Island, Korea. He was appointed as an IEEE EMC society distinguished lecturer in a period from 2009-2011. He received Technology Achievement Award from IEEE Electromagnetic Society in 2010. He is IEEE fellow.

WORKSHOP WS-04	Electromagnetic Compatibility of Switched-Mode Power Supplies
TIME	3:50pm – 5:50pm, Wednesday, May 18 th
VENUE	Narcissus B
ORGANIZER	Prof. Dr.-Ing. Günter Keller, Deggendorf Institute of Technology, Deggendorf, Germany
SPEAKERS	Prof. Dr.-Ing. Günter Keller, Deggendorf Institute of Technology, Deggendorf, Germany

◆ **ABSTRACT**

The workshop is subdivided into six parts: Terminology and legal requirements, EMC tests (emissions and immunity), coupling mechanisms and countermeasures, types of interferences and their characteristics, origin of electromagnetic interferences in switched mode power supplies and practical aspects of EMC design of switched mode power supplies (SMPS). The origins are discussed in terms of normal operating mode of SMPS in low, medium and high frequency range, common-mode and differential-mode and due to parasitic of active and passive components.

Main part (half of the time) is the EMC design, including power factor correction, EMC filter, shielding, hard and soft-switching converters, suitable active and passive components, general and specific layout recommendations, examples: buck converter, flyback converter, immunity.

- ▶ **Legal Regulations**
- ▶ **International Standards**
- ▶ **Electromagnetic Tests: Emissions, Immunity**
- ▶ **Coupling Mechanisms and Countermeasures**
- ▶ **Signals and Characteristics**
- ▶ **Origin of Electromagnetic Interferences in Switched Mode Power Supplies**
- ▶ **EMC Design of Switched Mode Power Supplies**

◆ **BIOS OF SPEAKERS**



Prof. Dr.-Ing. Günter Keller was born in Werneck, Germany, in 1962. He received the Diploma degree in electrical engineering from the Friedrich Alexander University of Erlangen, Germany, in 1989, and the degree of Dr.-Ing. in electrical engineering from the University of Kassel, Germany in 1997 with the focus area of power electronics for grid connected photovoltaic inverters.

Also in 1997, he joined the Faculty of Electrical Engineering, Media Technology and Informatics at the Deggendorf Institute of Technology as a Professor. Since almost 20 years he is lecturer of the courses Basics of Electrical Engineering, Electromagnetic Compatibility, Power Electronics, Power Supply Circuits and Renewable Energies. As the first Professor he strongly formed the structure of the Faculty. Since nearly one decade he carries out professional trainings for the industry, mainly for developing engineers in the area of switch mode power supplies and electromagnetic compatibility.

WORKSHOP WS-05	Improved EMC test methods in industrial environments
TIME	10:40am – 12:20am, Friday, May 20 th .
VENUE	Rose 3
ORGANIZER	Dr. Dongsheng ZHAO, VSL, Dutch Metrology Institute
SPEAKERS	Dr. Soydan ÇAKIR, TÜBİTAK UME Dr. Dongsheng ZHAO, VSL, Dutch Metrology Institute Dr. Mohammed Salhi, TÜBİTAK UME of Turkey Dr. Michitaka AMEYA, National Metrology Institute of Japan (NMIJ) Dr. Kimihiro TAJIMA, NTT Advanced Technology Corporation (NTT-AT)

◆ ABSTRACT

Development and maintenance of the EMC measurement facility in accordance with standards are heavy loads for industry. Using the facility in EMC laboratories is a solution but expensive and time consuming and in most cases, it is not possible for large or stationary EUTs (Equipment under Test). Improved methodologies and procedures are required for industry in terms of EMC test and measurement applications. The main obstacle is that relations are not clear between the measurement results of these alternative EMC test methods and the standard test methods in industry.

This workshop intends to present an overview of the most recent European and Asia research activities in the field of improved alternative EMC test method for conducted/radiated emission and immunity tests.

- ▶ **Alternative Conducted Emission Test Methods Based on RF Impedance Measurement**
- ▶ **Alternative Conducted Immunity Test Methods in Absence of Common Mode Impedance Requirements**
Dr. Soydan ÇAKIR; TÜBİTAK UME, Turkey
- ▶ **Alternative Radiated Emission Test Methods**
Dr. Mohammed Salhi; TÜBİTAK UME, Turkey
- ▶ **In-situ Impedance Measurement for Stationary EUTs**
Dr. Dongsheng ZHAO; VSL, Dutch Metrology Institute, The Netherlands
- ▶ **Radiated Emission Measurement using 2-channel Vector Signal Analyzer**
Dr. Michitaka AMEYA; National Metrology Institute of Japan (NMIJ)
- ▶ **Improved in Situ Measurement Methods for Radio Disturbance Produced by Physically Large Equipment**
Dr. Kimihiro TAJIMA, NTT Advanced Technology Corporation (NTT-AT), Japan

◆ BIOS OF SPEAKERS



Dr. Soydan Çakır received the B.S. degree in electronics and communication engineering from Istanbul Technical University, Istanbul, Turkey, in 1999, and the M.S and Ph.D. degrees in electronics and communication engineering from Kocaeli University, Gebze, Turkey, in 2008 and 2012 respectively. Since 2005, he has been with the National Metrology Institute (UME), Gebze, where he is currently a member of the Electromagnetic Metrology Group. His research interest includes antenna pattern/factor measurements, electromagnetic compatibility tests/calibrations, and laser spectroscopy.



Dr.-Ing. Mohammed Salhi received his B.Sc. degree in Physics from An-Najah University, Palestine, in 1999 and the M.Sc. degree in Communications Technology in 2003 from the University of Ulm, Germany. He earned his Ph.D. degree in Electrical Engineering from the High Frequency Technology Institute at the Technical University Braunschweig, Germany, in 2009. Then he worked as a research fellow in the group “Electromagnetic fields and antenna measuring techniques” at the German Institute of Metrology (PTB) – Braunschweig, Germany. Since October 2015 he is a research member at the Turkish Metrology Institute (TUBITAK UME) in the “Group of Electromagnetic Compatibility”. His main interests lie in the fields of antennas, propagation, and electromagnetic compatibility.



Dr. Dongsheng Zhao received his B.Sc. degree of Electronic Engineering from the Shanghai JiaoTong University, Shanghai, China, in 1993. He completed his M.Sc. degree of Electric engineering in the University of Twente, Enschede, The Netherlands in 2004. He received Ph.D. degree in electrical engineering from the Technical University of Delft, Delft, The Netherlands in 2009. Dr. Zhao has been a research scientist at the R&D department of VSL, Dutch Metrology Institute since 2008. He served as project leader or task leader in several joint research projects since joining VSL. He has been involved in ENG05 Lighting, T4.J01 Power & Energy, T4.J07 EMF and SAR, IND16 Ultrafast, ENG63 GridSens, SIB059 Q-Wave and IND60 EMC. His main interests lie in the fields of power electronics, EMC and electrical metrology.



Dr. Michitaka Ameya (M’08) received the B.E. and M.E. degrees from the Department of Electronic Engineering, Hokkaido University, Hokkaido, Japan, and the Ph.D. degree from the Graduate School of Information Science and Technology, Hokkaido University, in 2003, 2005, and 2008, respectively. He has been a Senior Researcher with the National Metrology Institute of Japan, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan, since 2008. His current research interests include electromagnetic compatibility, millimeter-wave antenna measurements, and millimeter-wave radar cross section measurements.



Kimihiro TAJIMA received the B.E. and M.E. degrees from the department of electronics at Kumamoto University, Japan in 1986 and 1989, respectively. He joined the NTT Electrical Telecommunication Laboratory, NTT Corporation in 1989. He had been engaged in the studies on optical-scheme-based measuring methods in EMC (Electromagnetic Compatibility) field, development of mobile communication systems using infrared rays for EMC, etc.

Currently, he is a Team Manager of EMC team, NTT Advanced Technology Corporation. He is a Technical Expert of IEC/CISPR/A and a chair of A group in Japan National Committee, and also a member of IEICE (The Institute of Electronics, Information and Communication Engineers) and IEEE.

WORKSHOP WS-06	New Trends in EMC Test, Measurement and Calibration Techniques
TIME	1:30pm – 3:30pm, Friday, May 20 th .
VENUE	Rose 3
ORGANIZER	Janet O’Neil, ETS-Lindgren Zhong Chen, ETS-Lindgren
SPEAKERS	Mark Terrien, Keysight Technologies Martin Wiles, ETS-Lindgren Zhong Chen, ETS-Lindgren Thomas Kleine-Ostmann, Physikalisch-Technische Bundesanstalt, Braunschweig Don Heirman, Don HEIRMAN Consultants Tang Yung-Chi, Bureau of Standards, Metrology and Inspection (BSMI)

◆ **ABSTRACT**

This workshop will present detailed information about the state of the art in calibration of commonly used EMC measurement equipment required by many current international standards. Specific requirements and nuances that can challenge even the most experienced EMC practitioner will be discussed, and novel methods for practical implementation for real-world application will be shared with attendees. This workshop will take a novel approach to equipment calibration by delving into implementation of specific characteristics and requirements, as opposed to a general treatment of calibration. New EMC measurement techniques for test site validation that is more comprehensive than the commonly used site VSWR technique called out in CISPR will be presented. A new, alternative measurement method to optimize testing on an open area test site (OATS) will be reviewed as a means to mitigate external interference and improve the quality of the test results. Data will be shared on the use/non-use of bore sight antenna measurements and how this impacts product performance evaluation.

Speakers include experts who are actively involved in using, writing and maintaining the standards in which the EMC measurement requirements are established, including CISPR, ISO, ANSI ASC C63® and IEEE.

Attendees can expect to increase their understanding of both the background of the latest requirements for calibration of EMC measurement equipment as well as learn novel approaches to test site validation in anechoic chambers and performing EMC measurements on an OATS.

▶ **Antenna Calibration and Site Validation for Radiated Emissions Above 1GHz (CISPR 16-1-4, 16-1-5, 16-1-6)**

Martin Wiles, ETS-Lindgren, Stevenage, England

▶ **Understanding the Importance of EMI Compliance Receiver Calibration Measurements**

Mark Terrien, Keysight Technologies, Santa Rosa, CA

▶ **Using Time Domain Techniques for Fast and Efficient Site VSWR Measurements (Draft ANSI C63.25)**

Zhong Chen, ETS-Lindgren, Cedar Park, Texas

▶ **Calibration of Field Probes for EMC Measurements**

Thomas Kleine-Ostmann, Physikalisch-Technische Bundesanstalt, Braunschweig

▶ **Required Antennas (Including Hybrids) Used in ANSI C63.4-2014 for FCC Compliance Testing**

Don Heirman, Don HEIRMAN Consultants, Lincroft, New Jersey

▶ **Bore sight and non bore sight Comparison test from 1~6 GHz**

Tang Yung-Chi, Bureau of Standards, Metrology and Inspection (BSMI), Ministry of Economic Affairs

◆ BIOS OF SPEAKERS



Martin Wiles is Director Test Solutions EMEA (Europe and Middle East and Africa) at ETS-Lindgren. He joined the company in 1992, working primarily in the designing and testing of EMC, microwave antenna and wireless anechoic chambers, as well as providing technical support to the antenna and probe component product lines. He is now responsible for the European Test Solutions group based in Munich, providing EMC and wireless RF system design, integration and service capabilities to ETS-Lindgren customers across Europe. Martin has published and presented numerous papers in Europe, Asia and North America as well as technical articles in trade magazines. He has been actively involved in several industry standards committees, including the French National Committee on CENELEC TC210 1992-1996, and since 2005 has been on the UK National Committee for EMC, and the IEC-CISPR SC/A working group responsible for CISPR 16. Martin's education includes a B.Sc. (Hons) in Physics from the University of Bath, UK; an M.Sc. in Microwave Electronics, from the Université de Pierre et Marie Curie, Paris, France; and is currently studying for an MBA from the Open University.



Mark Terrien is the EMC Business Manager for Keysight Technologies. Mark has over 20 years of product development experience with Keysight Technologies, Hewlett Packard and Agilent Technologies as an R&D Program Manager and designer, with a focus on EMC receivers, spectrum analyzers and microwave test equipment. He holds an MSEE in Electromagnetic Wave Theory from the University of Wisconsin-Madison and an MBA from Golden Gate University in San Francisco. Mark is a member of the US national delegation to CISPR subcommittee A.



Mr. Zhong Chen is the Director, RF Materials at ETS-Lindgren, located in Cedar Park, Texas. He has more than 18 years of experience in RF testing 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 test site validation standards. He is chairman of the IEEE 1309 committee for developing calibration standards for field probes. 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



Thomas Kleine-Ostmann was born in Lemgo, Germany, in 1975. He received the M.Sc. degree in Electrical Engineering from Virginia Tech in 1999, the Dipl.-Ing. degree in Radio Frequency Engineering in 2001 and the Dr.-Ing. degree in 2005 both from TU Braunschweig. Then he joined PTB in Braunschweig working on realization and transfer of the EM field strength, EMC, antenna measuring techniques and THz metrology. In 2007, he became head of the EM Fields Group, and in 2012, of the EM Fields and Antenna Measuring Techniques Group. He was appointed Privatdozent at TU Braunschweig in 2014.



Donald Heirman is president of Don HEIRMAN Consultants, founded in 1997 after 34 years with Bell Labs. It provides training and standards development in electromagnetic compatibility (EMC). His primary activity is in EMC measurement standardization where he has worked for over 50 years.

Don is a member of the IEEE EMC Society Board of Directors, chair of its measurements committee, and chair of its special committee on Smart Grid. He is chairman of the International Electrotechnical Commission (IEC) International Special Committee on Radio Interference (CISPR) and chairman of the IEC Advisory Committee on EMC (ACEC). He was awarded the IEC Lord Kelvin Award in 2008 for his outstanding contribution to international standardization. He also chairs the US Smart Grid Interoperability Panel working group on electromagnetic interoperability issues.

Mr. Heirman is a life member and life Fellow of the IEEE and has presented numerous workshops, tutorials, and technical papers.



Mr. Tang, Yung-Chi was born in 1955. He graduated from Feng-Chia University with EE degree.

Mr. Tang was an engineer for Chinese Petroleum Cooperation from 1980 to 1984. Then, he worked for Electronic Testing Center (ETC) from 1984 to 1993 as a manager in EMC testing field. Since 1993, he joined EMC Division 6th Department of BSMI (Bureau of Standards, Metrology and Inspection) as a chief engineer till now.

Mr. Tang leads the technical planning and development in BSMI. And he also researches new topic or technology in EMC filed, for example, IC EMC.

WORKSHOP WS-07	EMC Simulation of Consumer Electronic Devices
TIME	3:50pm – 5:50am, Friday, May 20 th
VENUE	Rose 2
ORGANIZER	Dr. Marko Walter, CST AG Chiang Chun Tong, Senior Application Engineer, CST South East Asia
SPEAKERS	Dr. Marko Walter, CST AG Chiang Chun Tong, Senior Application Engineer, CST South East Asia

◆ **ABSTRACT**

In the design of modern electronic systems simulation can play a crucial role in achieving EMC compliance.

As simulation does not require a working prototype it can be employed already in the early stage of the design process. Simulation can answer fundamental “what if” questions like for example, the effect of component placement and orientation. This type of decisions made during the early phase of the design process have a high impact on the overall product development and require substantial resources if a need to change them arises.

On the other hand, owing to the complexity of modern electronics there will often be the need to troubleshoot products performance at the late stage of the design. For this task, simulation is also helpful as it can visualize unintended coupling paths and allows understand the cause of problems. It helps the engineer to obtain a broader understanding of the electromagnetic behavior of the device.

The workshop consists of three parts. It will start showing how to detect EMC issues on printed circuit boards, by means of a rule checking tool: CST Boardcheck. In the second part, it will present 3D simulations of components and enclosures. We will present how the different solvers contained in the CST Studio Suite can be efficiently applied to certain types of analysis helping to understand the EMC related behavior of this component. The last part deals with simulation of cable entry susceptibility and how different grounding strategies can severely affect the field coupled into a device.

◆ **BIOS OF SPEAKERS**



Marko Walter studied Electrical Engineering at the University of Wuppertal, Germany. His PhD thesis deals with the electromagnetic simulation of microwave plasma sources.

He started at CST, Germany, 1998 as an Application Engineer working several years in technical support and is now as Sales Director responsible for CST products in parts of Europe, India, South-East Asia and China.



CT Chiang received his B. Eng (Hons) in Electronics, majoring in Telecommunication in 2001 from Multimedia University, Malaysia. From 2001 – 2002, he worked as Manufacturing Engineer in Sony Electronics Malaysia, designing test fixtures and procedures. He then returned to Multimedia University and obtained M.Eng.Sc degree in Microwave Engineering in 2005. In his Master studies, he was focusing on Anechoic Chamber construction, qualification, Radar Cross Section (RCS) research and Microwave Imaging.

In 2005, he worked at antenna design engineer for Laird Technology, which focused on antenna design for handheld devices. In 2007, he then started to work as Application Engineer in CST. He was involved in technical support for various topics, involving RF / Microwave, EDA, EMC and low frequency applications. In 2013, he worked as Sales and Technical Support Manager, which focus on sales and technical support role on various applications in CST. Up to now, he is taking care of CST sales and support in Thailand, Vietnam and key accounts in Malaysia. Besides that, he is heavily involved in technical support in China market.

WORKSHOP WS-08	Addressing Test Methodologies and New Challenges Presented by Emerging Modern Vehicles and Unmanned Aerial Systems
TIME	1:30pm – 3:30pm, Wednesday, May 18 th .
VENUE	Rose 1
ORGANIZER	Janet O’Neil, ETS-Lindgren Yulung Tang, ETS-Lindgren
SPEAKERS	Dr. Vignesh Rajamani, Exponent Mr. Yulung Tang, ETS-Lindgren Dr. Zheng Liu, China Academy of Telecommunications Research (CATR), Beijing

◆ **ABSTRACT**

Nowadays, continuous and rapid advances in technology raise the transportation system to a higher performance level. As it is today, we see autonomous vehicles driving themselves on the road. Unmanned drones also hover in the sky. Novel technologies are developing at a rate that requires the regulatory or performance testing methodologies needed to catch up promptly as well. In this workshop, we address some test methodologies we may use and the testing challenges we may face as these new technologies are continuously added to the rapid development of modern vehicles and unmanned aerial systems.

▶ **EMC Test Challenges of Unmanned Aerial Systems - Why Drones Matter to an EMC Test Engineer and Antenna Designer**

Vignesh Rajamani, Exponent, USA

▶ **A Study of Reverberation Chamber Usage for Testing Wireless Applications in Modern Vehicles**

Yulung Tang, ETS-Lindgren, Taipei

▶ **An Anechoic Chamber Based Advanced VDT+OTA Test Solution to Reproduce a High-speed Train Radio Environment in Test Lab**

Yang Huizhi/Zheng Liu, China Academy of Telecommunications Research (CATR), Beijing

◆ BIOS OF SPEAKERS



Dr. Vignesh Rajamani received his Ph. D. degree in Electrical Engineering with emphasis on Statistical Electromagnetics at Oklahoma State University and a Master of Science degree in electrical engineering with emphasis on computational Electromagnetics from Oklahoma State University and Bachelors of Engineering degree in Electronics and Communication engineering from the University of Madras. His research focuses on statistical electromagnetics, antenna engineering, RFID, reverberation chamber operations, validation, and EMI/C issues with Unmanned Aerial Systems. His current research focuses estimating probability of failure of electronic systems due to electromagnetic interference and compatibility. He is the Vice President of Member Services for the IEEE Electromagnetic Compatibility (EMC) Society and involved with several technical committees and educational activities through EMC Society and Oklahoma State University. He is a Senior Member of IEEE and served as a distinguished lecturer for the IEEE EMC Society for term 2013-2014. He has lectured around the world on reverberation chamber test methodologies and has taught design engineering seminars for faculty and students at many universities focusing on challenges in engineering education and to prepare the faculty to handle them by spreading a significant number of Project Based Learning (PBL) classes across the curriculum.



Yulung Tang received his M.S. in Electrical Engineering from California Institute of Technology in 2004. During his studies in school, he conducted research work on the MMIC development for radio astronomy applications, as well as mmW point-to-point communication systems. He joined TriQuint Semiconductor in 2005 as a design engineer, working on the MMIC development for wireless communication systems. Since 2008, he has been with ETS-Lindgren and working on RF design of the anechoic chamber and antenna measurement system. His interest of research is focused on RF circuit and system design for radio astronomy, electromagnetic wave measurement and medical applications.



Dr. Huaizhi Yang (杨怀志) graduated from the Beijing Institute of Technology with a Ph.D. in Electromagnetic Field and Microwave Technology in 2007. His studies included six years of RF MIMO front-end design experience. Following his studies, Huaizhi joined the Finnish based company Elektrobit in 2008 as a Hardware Team Manager/Project Team Lead in the Asia-Pacific engineering team for BTS/UE design projects, and was later transferred to the Prosim radio channel emulator product group, which Anite acquired in early January 2013. In 2015 his role was extended to include all product lines within Anite's Device & Infrastructure Testing business as he transitioned into his current role as Regional Product Marketing Manager for China.

TECHNICAL PROGRAM AT A GLANCE

Color codes: Workshops Tutorials Special Sessions Topical Symposium Regular Sessions Plenary Talks Opening Ceremony & Keynote Poster Session

Date	Time		Rose 1	Rose 2	Rose 3	Narcissus A	Narcissus B	Poster Sessions	Exhibition		
May 18th (WE)	08:40am 10:20am	AM-I	WS01 EMC in Wireless Devices	WS02 Computational Electromagnetics and Multiphysics Methods for Solving Complex EMC Problems	TU01 Metamaterials, Periodic Structures and EBG in EMC/Radiation/Guided Wave Problems	SS08 EM Functional Safety	TS02 Topical Symposium on Smart Grid and Power Electronics EMC				
	10:20am 10:40am		Tea Break								
	10:40am 12:20pm	AM-II	WS03 Advances in Automotive EMC Test and Measurements	WS02 Computational Electromagnetics and Multiphysics Methods for Solving Complex EMC Problems	SS14 EMC Issues Related to Common-Mode Noise	TC10 SI and PI (A)	TS02 Topical Symposium on Smart Grid and Power Electronics EMC				
	12:20pm 01:30pm		Lunch								
	01:30pm 03:30pm	PM-I	WS08 Addressing Test Methodologies and New Challenges Presented by Emerging Modern Vehicles & Unmanned Aerial Systems	WS02 Computational Electromagnetics and Multiphysics Methods for Solving Complex EMC Problems	TC02 EMC Measurement and EM Environment	TC14 Nanotech and New Material	TU03 Introduction to EMC Made Simple-Printed Circuit Board and System Design				
	03:30pm 03:50pm		Tea Break								
	03:50pm 05:50pm	PM-II	SS13 EMC Design in Mobile Devices	TU02 Post-layout Check Procedure for Intel Server Customers	TU04 The Role of the IEC Advisory Committee on EMC (ACEC) in Coordinating IEC EMC Activities.	SS05 Signal Integrity and EMC in advanced technology	WS04 Electromagnetic Compatibility of Switched-Mode Power Supplies				
	06:30pm 09:00pm		Welcome Reception								
May 19th (TH)	08:40am 10:20am	AM-I	SS03 Potential Antenna Technologies and Applications for Wireless/Mobile Communications	TC11 CEM and Multiphysics (A)	SS14 EMC Issues Related to Common-Mode Noise	SS11 Signal Integrity Modeling, Design and Validation – Bridging the Gap between Academic Research and Industrial Applications	TS02 Topical Symposium on Smart Grid and Power Electronics EMC				
	10:20am 10:40am		Tea Break								
	10:40am 12:20pm	AM-II	Opening Ceremony for 2016 APEMC Chair: Er-Ping Li, Symposium General Chair Venue: Bougainvillea Hall, Level 5 Keynote Speech I: Interfered Technology: a Radiant Future <i>Frank Leferink, THALES in Hengelo, The Netherlands</i> Keynote Speech II: The Key Technologies and the Challenge in Development of 5G Communication <i>Li Li (李力), Huawei Technologies Co. Ltd., Shenzhen</i>								
	12:20pm 01:30pm		Lunch								
	01:30pm 03:30pm	PM-I	Industry Session	TS04 Topical Mini-Symposium on Bio-EM (A)	TC03 Lightning	Plenary Talk: W.C. Chew (UIUC) Plenary Talk: M. Swaminathan (GIT)		01:00-3:30pm Poster Session I			
	03:30pm 03:50pm		Tea Break								
	03:50pm 05:50pm	PM-II	Industry Session	TU05 EM Functional Safety	SS01 4G RF & Antenna measurement advances	TC10 SI and PI (B)	TU06 Smart Grid Support and EMC Issues	3:30-5:30pm Poster Session II			
06:30pm		Welcome Reception									

open

TECHNICAL PROGRAM AT A GLANCE

Color codes: Workshops Tutorials Special Sessions Topical Symposium Regular Sessions Plenary Talks Poster Session

Date	Time		Rose 1	Rose 2	Rose 3	Narcissus A	Narcissus B		Exhibition	
May 20th (FR)	08:40am 10:20am	AM-I	SS04 EMC Aspects of Lightning	TC11 CEM and Multiphysics (B)	SS17 IEMI	TC15 Antennas and Propagation (A)	TC08 Smart Power and Low Freq EMC		Open	
	10:20am 10:40am		Tea Break							10:00am-12:00pm Poster Session V <i>(Student Paper Competition)</i>
	10:40am 12:20pm	AM-II	SS04 EMC Aspects of Lightning	SS10 ESD Protection Techniques for Circuits and Systems	WS05 Improved EMC Test Methods in Industrial Environments	Plenary Talk: Tzong-Lin Wu (NTU) Plenary Talk: James Drewniak / Jun Fan (MUST)				
	12:20pm 01:30pm		Lunch Luncheon Talk: Prospects on M-ICT(Mobile Information Communication Technology) Strategy and Future Trend Yuan Fei, ZTE ,Shenzhen Venue: Rose Hall 3 SCEC Level 5							
	01:30pm 03:30pm	PM-I	TC05 System Level EMC and Protection A	SS12 ESD and Transients	WS06 New Trends in EMC Test, Measurement and Calibration Techniques	TC10 SI and PI (C)	TS03 Topical Symposium on Wireless Power transfer Technologies	01:00-3:30pm Poster Session III		
	03:30pm 03:50pm		Tea Break							
	03:50pm 05:50pm	PM-II	SS15 Recent advances in PCB design and characterization for high speed interconnect	WS07 EMC Simulation of Consumer Electronic Devices	TC02 EMC Measurement and EM Environment	TS01 Topical Symposium on IC EMC (A)	TU07 Paper Writing Skills for IEEE Transactions	3:30-5:30pm Poster IV		
	06:30pm 09:00pm		Banquet Dinner							
May 21 (SA)	08:40am 10:20am	AM-I	SS06 EM Information Leakage from Commercial Devices and Its Countermeasure	TC01 EMC Management/Standards	TC02 EMC Measurement and EM Environment	TS01 Topical Symposium on IC EMC (B)	TC04 High Power EM		Open	
	10:20am 10:40am		Tea Break							
	10:40am 12:20pm	AM-II	SS06 EM Information Leakage from Commercial Devices and Its Countermeasure	SS07 Practical challenges and computational analysis of system-level EMC	TC02 EMC Measurement and EM Environment	TC09 IC and Semiconductor EMC	TS03 Topical Symposium on Wireless Power transfer Technologies			
	12:20pm 01:30pm		Lunch							
	01:30pm 03:30pm	PM-I	TC13 Wireless Communication	TC11 CEM and Multiphysics (C)	TC05 System Level EMC and Protection	TC15 Antennas and Propagation (B)	TS03 Topical Symposium on Wireless Power transfer Technologies		Closing	
	03:30pm 03:50pm		Tea Break							
	03:50pm 05:50pm	PM-II	TC06 Transportation EMC	TS04 Topical Mini-Symposium on Bio-EM (B)	TU08 Correct Calibration and Application of Dipole-like Antenna Factors	TC15 Antennas and Propagation (C)				
06:30pm		-- The End--								



Sessions

May 18-21, 2016

APEMC 2016

2016 EMC in Shenzhen Symposium & Technical Exhibition,
May 18-21, 2016

TECHNICAL SESSIONS – WEDNESDAY, MAY 18, 2016

Rooms	Rose 1	Rose 2	Rose 3
08:40am – 10:20am	WS01 EMC for Wireless Devices <i>Organizer(s):</i> Jun Fan and David Pommerenke, Missouri University of S&T	WS02: Computational Electromagnetics and Multiphysics <i>Organizer(s):</i> Wenyan Yin, Zhejiang University Haijin Zhou, China Academy of Science	TU01 Systems Metamaterials, Periodic Structures and EBG in EMC/Radiation/Guided Wave Problems <i>Organizer(s):</i> Sungtek Kahng, Incheon National University
	WE-AM-I-WS01-1 Receiver Desensitization due to Radio-frequency Interference and LCD Modulation <i>Jun Fan, Missouri University of Science and Technology</i>	WE-AM-I-WS02-1 Electromagnetic Modeling for Communication Systems and Devices <i>Zhizhang (David) Chen, UESTC & Dalhousie University of Canada</i>	WE-AM-I-TU01-1 Introduction to Metamaterials and the Advanced Technologies in EMC and RF Passive Components <i>Sungtek Kahng, Incheon National University</i>
08:40am – 10:20am	WE-AM-I-WS01-2 Large-scale ESD Modeling <i>David Pommerenke, Missouri University of Science and Technology</i>	WE-AM-I-WS02-2 High Performance Computing Method for Fast Simulating Complex Electromagnetic Environment Effects <i>Haijing Zhou, Institute of Applied Physics and Computational Mathematics; Software Center for High Performance Numerical Simulation, CAEP, Beijing</i>	WE-AM-I-TU01-2 How to Control Radiation Efficiency and Polarization with Metamaterials <i>Jeongho Ju, Antenna R&D Team, Electronics and Telecommunication Research Institute, Korea</i>
	WE-AM-I-WS01-3 Evaluation of Shielding can Effectiveness for Near-field Coupling using Dipole Moments <i>HarkByeong Park, Samsung Electronics, Korea</i>	WE-AM-I-WS02-3 Study on the Interaction Mechanism of Electromagnetic Waves with Plasma Sheath and Electromagnetic Scattering Modeling of Hypersonic Aircrafts in the Near-Space <i>Lixin Guo, Xidian University</i>	WE-AM-I-TU01-3 Advanced Technologies in RF Active Components <i>Hongjoon Kim, School of Electrical Engineering and Computer Sci., Kyungpook National University, Korea</i>



TECHNICAL SESSIONS – WEDNESDAY, MAY 18, 2016

<i>Rooms</i>	<i>Narcissus A</i>	<i>Narcissus B</i>	
8:40am – 10:20am	SS08 EM Functional Safety <i>Chair(s):</i> <i>Keith Armstrong, Cherry Clough</i> <i>Consultants</i>	TS02 Topical Symposium on Smart Grid and Power Electronics EMC <i>Chair(s):</i> <i>Henglin Chen, Zhejiang University</i> <i>Shuo Wang, University of Florida</i>	
08:40am	WE-AM-I-SS08-1 Predicting the Risk of Non-Compliance to EMC Requirements During the Life-Cycle (#1570234573) <i>Alexandre Boyer, He Huang (LAAS-CNRS, France), and Sonia Ben Dhia (INSA de Toulouse, France)</i>	WE-AM-I-TS02-1 Common Mode EMI Noise Modeling and Prediction for a Three-phase, Three-level, Grid Tied Photovoltaic Inverter (#1570242780) <i>Huan Zhang Shuo Wang (University of Florida), and Joonas Puukko (ABB US Corporate Research)</i>	
09:00am	WE-AM-I-SS08-2 EMC/EMI and Functional Safety: Methodology to Characterize Effects of Interferences on Devices (#1570239981) <i>Chaouki Kasmi and Jose Lopes-Esteves (French Network and Information Security Agency - ANSSI, France), Keith Armstrong (Cherry Clough Consultants, United Kingdom)</i>	WE-AM-I-TS02-2 High-frequency Stator-to-Frame Admittance Modeling for ac Machine by Using Debye Model (#1570240002) <i>Younggon Ryu and Ki Jin Han (Ulsan National Institute of Science and Technology)</i>	
09:20am	WE-AM-I-SS08-3 A Review of Research on the Effect of Aging on the EMC of Integrated Circuits (#1570236693) <i>Sonia Ben Dhia (INSA de Toulouse, France), Alexandre Boyer (LAAS-CNRS, France)</i>	WE-AM-I-TS02-3 Coupling Efficiency Analysis of Current Injection Probe for Bulk Current Injection (#1570240074) <i>Tao Liang, Yanzhao Xie and Zhan-yu Li (Xi'an Jiaotong University)</i>	
09:40am	WE-AM-I-SS08-4 How to Do EM Functional Safety - the Latest Guidance from the IET (#1570238596) <i>Keith Armstrong (Cherry Clough Consultants, United Kingdom)</i>	WE-AM-I-TS02-4 Research of Bearing Voltage and Bearing Current in Induction Motor Drive System (#1570242978) <i>Zhuxia Fan, Yongjian Zhi, Bingquan Zhu, Guanglin Yan, and Yu Shi (CSR Zhuzhou Institute Co Ltd)</i>	
10:00am	WE-AM-I-SS08-5 Study of the Effectiveness of Spatially EM-Diverse Redundant Systems under Plane-Wave Illumination (#1570238047) <i>Andy Degraeve (KU Leuven, Technology Campus Ostend, Belgium), Davy Pisssoort (KU Leuven, ReMI Research Group, Ostend, Belgium)</i>	WE-AM-I-TS02-5 Research of Electromagnetic Interference on the Eddy Current Sensor in the Inverter-Motor Driving System (#1570239706) <i>Lei Zhang, Chen Deng, Xiangming Zhang, Jianxuan Li and Jin Meng (Naval University of Engineering)</i>	

TECHNICAL SESSIONS – WEDNESDAY, MAY 18, 2016

Rooms	Rose 1	Rose 2	Rose 3
10:40am – 12:20pm	WS03 Advances in Automotive EMC Test and Measurements <i>Organizer(s):</i> Janet O'Neil and Yulung Tang, ETS-Lindgren	WS02 Computational Electromagnetics and Multiphysics –Part II <i>Organizer(s):</i> Wenyang Yin, Zhejiang University Haijin Zhou, China Academy of Science	SS14 EMC Issues Related to Common-Mode Noise <i>Chair(s):</i> Yoshiki Kayano, Akita University Yoshitaka Toyota, Okayama University
10:40am	WE-AM-II-WS03-1 EMC Chamber Design and Test Challenges for E-Vehicles and Electronic Sub-Assemblies (ESA) Yulung Tang, ETS-Lindgren	WE-AM-II-WS02-4 High-Capacity Full-Wave Electromagnetic Solvers for RFICs: Past, Present, and Future Gaofeng Wang, Hangzhou Dianzi University	WE-AM-II-SS14-1 Modeling of Common-mode Noise Generated by Motor Control Unit on Vehicle(#1570238701) Atsuhiko Takahashi, Takashi Kojima, Hideki Hosokawa, and Yoshiyuki Hattori (TOYOTA Central R&D Labs., Inc.); Teruaki Kato, Naoki Koshi, and Taiki Shibano (Aisin Seiki Co., Ltd.)
11:00am	WE-AM-II-WS03-2 Alternative Approaches to Assess the Radiated Susceptibility of Units and Sub-systems Onboard Vehicles Flavia Grassi, Politecnico di Milano, Milan		WE-AM-II-SS14-2 Common Mode Suppression in Full Bridge Converter by Impedance Balance Control(#1570239912) Tohlu Matsushima, Masaaki Maeda, Takashi Hisakado, and Osami Wada (Kyoto University)
11:20am	WE-AM-II-WS03-3 Use of New Absorber Materials and Placement Strategies for Effective EMC and Antenna Pattern Full Vehicle Testing Zhong Chen, ETS-Lindgren, Cedar Park, Texas	WE-AM-II-WS02-5 Time Domain Method for Simulation of Scattering from Oceanic Surface with Ship Wake Mingyao Xia, Peking University, Beijing	WE-AM-II-SS14-3 Application of Extended Mixed-Mode S-Parameters to Cascaded Three-Conductor Lines(#1570239861) Nan Zhang and Wansoo Nah (Sungkyunkwan University)
11:40am	WE-AM-II-WS03-4 Modeling, Simulation, and Measurement of Electromagnetic Interferences in Automotive Electric Vehicles Joungho Kim, Department of Electrical Engineering, KAIST (Korea Advanced Institute of Science and Technology)		WE-AM-II-SS14-4 A Study on Shielding Effectiveness of Shielded-PCB with considering Differential-Mode Impedance(#1570239121) Yoshiki Kayano (Akita University, Japan); Hiroshi Inoue (The Open University of Japan)
12:00pm			WE-AM-II-SS14-5 Alternative Technique to Estimate the Immunity Performance for In-vehicle Ethernet(#1570239989) Miyuki Mizoguchi, Hiroyuki Mori and Noboru Maeda (NIPPON SOKEN, INC.); Hiroki Keino, Takashi Yasuda and Hideki Goto (Toyota Motor Corporation)

TECHNICAL SESSIONS – WEDNESDAY, MAY 18, 2016

Rooms	Narcissus A	Narcissus B	Open Forum
10:40am – 12:20pm	TC10 Signal Integrity and Power Integrity (A) <i>Chair(s): Jose E. Schutt-Aine, University of Illinois at Urbana-Champaign Mei Jiang, Shenzhen University</i>	TS02 Topical Symposium on Smart Grid and Power Electronics EMC <i>Chair(s): Henglin Chen, Zhejiang University Flavia Grassi, Politecnico di Milano</i>	
10:40am	WE-AM-II-TC10-1 SPICE Circuit Synthesis from Complex Pole-Residue S-Parameter Representation (Invited) (#1570246351) <i>Jose E. Schutt-Aine (University of Illinois at Urbana-Champaign)</i>	WE-AM-II-TS02-1 Circuit modeling of the Test Setup for Pulsed Current Injection (#1570240013) <i>Zhitong Cui (State Key Lab. of Intense Pulsed Radiation Simulation and Effect, NINT), Flavia Grassi and Sergio A Pignari (Politecnico di Milano)</i>	
11:00am	WE-AM-II-TC10-2 Advanced Modeling and Measurement of Vertical Interconnect Transmission Lines (Invited) (#1570246324) <i>Kuan-Chuang Lu and Tzyy-Sheng Jason Horng, Kuan-Chung Lu (National Sun Yat-Sen University)</i>	WE-AM-II-TS02-2 Research of active EMI filter for Gallium Nitride based high frequency resonant converter (#1570239627) <i>YiLin Sha, Wenjie Chen and Heyuan Qi, Yaqiang Han, Xu Yang and Yuan Hao (Xi'an Jiaotong University)</i>	
11:20am	WE-AM-II-TC10-3 Investigation on Far End Crosstalk Saturation of Microstrip Differential Signal Pair (#1570239909) <i>Mei Jiang and Xiaolong Li (ShenZhen University), Boyuan Zhu and Junwei Lu (Griffith University)</i>	WE-AM-II-TS02-3 A rapid Modeling for Analysis the Effect of Transmission Line to Oil and Gas Pipeline (#1570241316) <i>Wenzhe Mu, Zhibin Zhao and Yongmei Zhu (North China Electric Power University), Xiaozhou Lei (Shaanxi Electric Power Design Institute)</i>	
11:40am	WE-AM-II-TC10-4 Application of the Preference Set-based Design to Layout of the Microstrip Line on Board Edge with RLGC Meta Modeling (#1570239892) <i>Kazuya Nagao, Masashi Kawakami, Yoshio Kami, Haruo Ishikawa and Fengchao Xiao (The University of Electro-Communications, Japan)</i>	WE-AM-II-TS02-4 Conducted Emission Analysis and Suppression of an Immediate Bus Converter Including Load's RF Impedance Effect (#1570238851) <i>Junping He, Zepeng Zhou Bo Zheng and Mizhao Zhao (Harbin Institute of Technology Shenzhen Graduate School)</i>	
12:00pm	WE-AM-II-TC10-5 Front Delay Based Causality for Network Parameters (#1570240199) BEST SYMPOSIUM PAPER FINALIST★ <i>Mikheil Tsiklauri, Nana Dikhaminjia, Jun Fan and James DREWNIAK (Missouri University of Science and Technology & EMCLab), Mikhail Zvonkin (Google Inc.)</i>	WE-AM-II-TS02-5 Analysis of the Effect on Smart Subassembly in Smart Substation for Lightning Strike Metal Framework (#1570240782) <i>Yaqi Yang and Zhibin Zhao (North China Electric Power University), Di Li, Xiangxue Zeng and Yichuan He (State Grid Electric Research Institute)</i>	

TECHNICAL SESSIONS – WEDNESDAY, MAY 18, 2016

Rooms	Rose 1	Rose 2	Rose 3
01:30pm – 03:30pm	<p>WS08 Addressing Wireless Test Methodologies and New Challenges Presented by Emerging Modern Vehicles and Unmanned Aerial Systems <i>Organizer(s): Janet O’Neil, ETS-Lindgren</i></p>	<p>WS02 Computational Electromagnetics and Multiphysics – Part II <i>Organizer(s): Wenyan Yin, Zhejiang University Haijin Zhou, China Academy of Science</i></p>	<p>TC02 EMC Measurement and EM Environment <i>Chair(s): Perry Wilson, National Institute of Standards and Technology Sai Wing Leung, City University</i></p>
01:30pm	<p>WE-PM-I-WS08-1 EMC Test Challenges of Unmanned Aerial Systems - Why Drones Matter to an EMC Test Engineer and Antenna Designer <i>Vignesh Rajamani, Exponent</i></p>	<p>WE-PM-I-WS02-6 High Performance Numerical Analysis of Multi-Physics Interactions and Its Applications <i>Tie Jun Cui, Southeast University</i></p>	<p>WE-PM-I-TC02-1 Acoustic and Electromagnetic Reverberation Chambers: Similarities and Differences (Invited) (#1570240292) <i>Perry Wilson (National Institute of Standards and Technology, USA)</i></p>
01:50pm			<p>WE-PM-I-TC02-2 Equivalent Current Model for Assessing Human Exposure to Inhomogeneous LF Magnetic Fields (#1570238845) <i>Yinliang Diao, Weinong Sun and Sai Wing Leung and Yun Ming Siu (City University of Hong Kong), Kwok Hung Chan (Hong Kong Productivity Council)</i></p>
02:10am	<p>WE-PM-I-WS08-2 A Study of Reverberation Chamber Usage for Testing Wireless Applications in Modern Vehicles <i>Yulung Tang, ETS-Lindgren</i></p>	<p>WE-PM-I-WS02-7 Solving Maxwell’s Equations by Orthogonal Decomposition with AH Function <i>Lihua Shi, PLA University of Science and Technology</i></p>	<p>WE-PM-I-TC02-3 A Method for Time-domain Parameters Identification from EMI Spectrum (#1570239751) <i>Xiaofan Shang, Donglin Su, Kaixiang Zhu, and Hui Xu(Beihang University)</i></p>
02:30pm			<p>WE-PM-I-TC02-4 The Benefits of Automation and Control Software for EMI/EMC Testing (#1570237588) <i>Christopher Lawrence (AR RF/Microwave Instrumentation)</i></p>
02:50pm	<p>WE-PM-I-WS08-3 An Anechoic Chamber Based Advanced VDT+OTA Test Solution to Reproduce a High-speed Train Radio Environment in Test Lab <i>Yang Zhihui/Zheng Liu, China Academy of Telecommunications Research (CATR)</i></p>	<p>WE-PM-I-WS02-8 Computational Multiphysics Method for Characterizing Electro- Thermo- Stress Effects of Semiconductor Devices in the Presence of an Intentional Electromagnetic Interference <i>Wen-Yan Yin, Zhejiang University</i></p>	<p>WE-PM-I-TC02-5 The Charging Process On Sensor’s Shell in Ion Flow Field and Its Influence towards Electric Field near HVDC Lines (#1570239758) <i>Kaitian Huang, Zhanqing Yu, Zhiye Gao and Rong Zeng (Tsinghua University), Min Li and Lei Liu (China Southern Power Grid)</i></p>
03:10pm			<p>WE-PM-I-TC02-6 Uncertainty Evaluation of an Alternative Conducted Emission Test Method (#1570240488) <i>Dongsheng Zhao (VSL, The Netherlands), Soydan Cakir and Osman Sen (TUBITAK UME, Turkey)</i></p>

TECHNICAL SESSIONS – WEDNESDAY, MAY 18, 2016

Rooms	Narcissus A	Narcissus B	Open Forum
01:30pm – 03:30pm	<p>TC14 Nanotech and New Materis for EMC <i>Chair(s):</i> <i>Marcello D'Amore, Sapienza University of Rome</i> <i>Ran Hao, Zhejiang University</i></p>	<p>TU03 Introduction to EMC Made Simple-Printed Circuit Board and System Design <i>Organizer(s): Mark Montrose, Montrose Compliance Services</i></p>	
01:30pm	<p>WE-PM-I-TC14-2 High Performance Lightweight Shield Made By Thin Flexible Tunable Graphene-Polymer Laminate (#1570238574) <i>Alessandro Giuseppe D'Aloia, Marcello D'Amore and Maria Sabrina Sarto (Sapienza University of Rome)</i></p>	<p>WE-PM-I-TU03-1 EMC Made Simple-Printed Circuit Board and System Design <i>Mark Montrose, Montrose Compliance Services, Inc., USA</i></p>	
01:50pm	<p>WE-PM-I-TC14-3 Development of Meltbrown Non-Woven Fabric Type Non-Magnetic Noise Suppressor (#1570239937) BEST STUDENT PAPER FINALIST★★ <i>Jiang Fu, Masahiro Yamaguchi (Tohoku University), Sho Muroga (National Institute of Technology Toyota College), Tomoya Tanaka, Chie Okamura, Lumina Obi and Kazufumi Kato (Asahikasei Fibers Corporation,)</i></p>		
02:10am	<p>WE-PM-I-TC14-4 Equivalent Modeling of the Microwave Dielectric Properties for Fiber Reinforced Shielding Composites (#1570236642) <i>Yi Liao, Guochang Shi, Liming Yuan and Xiaojun Ying (Shanghai Radio Equipment Research Institute)</i></p>	<p>WE-PM-I-TU03-2 EMC Made Simple-Printed Circuit Board and System Design <i>Mark Montrose, Montrose Compliance Services, Inc., USA</i></p>	
02:30pm	<p>WE-PM-I-TC14-5 Plasmonic Transmission Lines with Zero Crosstalk (#1570244651) <i>Ran Hao, Xiliang Peng, Hongsheng Chen, Wenyan Yin and Erping Li (Zhejiang University)</i></p>		
02:50pm	<p>WE-PM-I-TC14-6 A Transparent Broadband Absorber Based on Graphene (#1570245605) <i>Dongke Zhu, Yongsheng Li, Wenyan Yin and Erping Li (Zhejiang University, Huichun Yu (Huawei Technologies)</i></p>		

TECHNICAL SESSIONS – WEDNESDAY, MAY 18, 2016

Rooms	Rose 1	Rose 2	Rose 3
03:50pm – 05:50pm	SS13 EMC Design in Mobile Devices <i>Chair(s):</i> Hyun Ho Park, University of Suwon Eakhwan Song, Kwangwoon University	TU02 Post-layout Check Procedure for Intel Server Customers <i>Organizer(s):</i> Y.L. Li and Thonas Su , Intel Corporation	TU04 The Role of the IEC Advisory Committee on EMC (ACEC) in Coordinating IEC EMC Activities <i>Organizer(s):</i> Donald Heirman, Don HEIRMAN Consultants
03:50pm	WE-PM-II-SS13-1 Simulation-Based Investigation of RFI Reduction Techniques for Femtocell GPS Antenna (#1570236609) DongHo Yoon, JaeWan Jeon and ByungHo Chang (Samsung Electronics, Korea), and Hyun Ho Park (The University of Suwon)	WE-PM-II-TU02-1 Out of Guideline (OOG) Support Strategy Y.L. Li, Intel	WE-PM-II-TU04-1 What is ACEC? William Radasky Metatech
04:10pm	WE-PM-II-SS13-2 Interleaved Buck Converter Using RPPM Technique for Mobile Applications (#1570239458) Xin Liu, Keumbong Lee and Wansoo Nah (Sungkyunkwan University)	WE-PM-II-TU02-2 Channel Check Tool (CCT) for Post-layout Check Thonas Su, Intel	WE-PM-II-TU04-2 Trends in CISPR and its Subcommittees Donald Heirman Don HEIRMAN Consultants
04:30pm	WE-PM-II-SS13-3 System-level ESD Failure Analysis Depending on Source Generators (#1570238722) JungHo Jin, ChoongPyo Jeon, JinHwan Kim and YuChul Hwang (Samsung Electronics)	WE-PM-II-TU02-3 Channel Noise Scan (CNS) for Post-layout Debug Jimmy Hsu, Intel	WE-PM-II-TU04-3 Trends in TC77 (EMC) and its Subcommittees William Radasky Metatech, USA
04:50pm	WE-PM-II-SS13-4 Reduction of Leakage Magnetic Field for Wireless Power Transfer Coils in Laptop (#1570239999) Jaehyoung Park (KAIST, Korea), Hyun Ho Park (The University of Suwon), Seungyoung Ahn (KAIST)	WE-PM-II-TU02-4 Case Study: Power noise impact on SATA Yinglei Ren, Intel	WE-PM-II-TU04-4 Emission Standardization in the 2 kHz to 150 kHz frequency band William Radasky Metatech, USA EMC for E-mobility William Radasky Metatech, USA
05:10pm	WE-PM-II-SS13-5 Measurement and Modeling of System-level ESD Noise Voltages in Real Mobile Products (#1570239911) BEST STUDENT PAPER FINALIST★★ Myungjoon Park, Junsik Park (UNIST, Korea), Manho Seung, Joungcheul Choi, Changyeol Lee and Seokkiu Lee (SK Hynix Inc., Korea), Jinguok Kim (UNIST, Korea)	WE-PM-II-TU02-5 Channel Quality Scan (CNS) for Debug Nan Kang, Intel	WE-PM-II-TU04-5 Medical Electronics EMC Assessment of Human Exposure to electromagnetic fields Donald Heirman Don HEIRMAN Consultants

TECHNICAL SESSIONS – WEDNESDAY, MAY 18, 2016

Rooms	Narcissus A	Narcissus B	Open Forum
03:50pm – 05:50pm	SS05 Signal Integrity and EMC in Advanced Technology Chair(s): Ding-Bing Lin, National Taipei University of Technology Tzong-Lin Wu, National Taiwan University	WS04 Electromagnetic Compatibility of Switched-Mode Power Supplies Chair(s): Günter Keller, Deggenndorf Institute of Technology	
03:50pm	WE-PM-II-SS05-1 Wideband Equivalent Circuit Model of Through-Silicon-Via with MOS Capacitance Effect (#1570239994) Kibeom Kim (KAIST, Korea), Hyun Ho Park (The University of Suwon, Korea), Seungyoung Ahn (KAIST)	WE-PM-II-WS04 Electromagnetic Compatibility of Switched-Mode Power Supplies Günter Keller, Deggenndorf Institute of Technology, Deggenndorf, Germany The workshop comprises six parts: Legal Regulations International Standards Electromagnetic Tests: Emissions, Immunity Coupling Mechanisms and Countermeasures Signals and Characteristics Origin of Electromagnetic Interferences in Switched Mode Power Supplies EMC Design of Switched Mode Power Supplies	
04:10pm	WE-PM-II-SS05-2 Signal Integrity Improvements of Bended Coupled lines by Using Miniaturized Capacitance and Inductance Compensation Structures (#1570233057) Chung-Pin Huang Ding-Bing Lin, and Yi-Chien Chen (National Taipei University of Technology), Hsin-Nan Ke (PEGATRON Corporation), Wen-Sheng Liu (WIESON Technologies Co., Ltd.)		
04:30pm	WE-PM-II-SS05-3 Design Methodology of Tightly Coupled Asymmetrically Tapered Bend for High-density Mounting in Differential Transmission Lines (#1570239582) BEST SYMPOSIUM PAPER FINALIST★ Chenyu Wang, Kengo Iokibe and Yoshitaka Toyota (Okayama University)		
04:50pm	WE-PM-II-SS05-4 Dipole-Moment Model Including Phases for IC Near-Field Analysis Based on GTEM Cell Measurements (#1570239893) Kyungjin Kwak and Dongil Shin (Ulsan National Institute of Science and Technology, Korea), Jaehyuk Kim (LG Electronics, Korea), Jingoek Kim (UNIST)		
05:10pm	WE-PM-II-SS05-5 Transmission Performance of Bonding Wire at High Frequency (#1570240952) Panpan Zuo, MengJun Wang, Hongbin Li, Tao Song and Jianying Liu (Hebei University of Technology, Tianjin)		

TECHNICAL SESSIONS – THURSDAY, MAY 19, 2016

Rooms	Rose 1	Rose 2	Rose 3
8:40am – 10:20 pm	SS03 Potential Antenna Technologies and Applications for Wireless/Mobile Communications <i>Chair(s): Hsi-Tseng Chou, National Taiwan University</i>	TC 11 CEM and Multiphysics (A) <i>Chair(s): Tie Jun Cui, Southeast University Jian Wang, University of Ningbo</i>	SS14 EMC Issues Related to Common-Mode Noise <i>Chair(s): Yoshitaka Toyota, Okayama University Yoshiki Kayano, Akita University</i>
8:40am	TH-AM-II-SS03-1 Observing the Phenomena of Loading a Reduced Ground Effects LTE Antenna into a Real Laptop Computer (#1570237527) <i>Chow-Yen-Desmond Sim, Yuan-Lung Lee, Po-Wei Wu, Chun-Cheng Chan and Chih-Yang Chiang (Feng Chia University)</i>	TH-AM-II-TC11-1 A New Method to Break the Challenge of Signal Integrity Using the Spoof Surface Plasmon Polaritons (Invited) (#1570236679) <i>Tie Jun Cui, Hao Chi Zhang and Jun Feng Liu (Southeast University)</i>	TH-AM-II-SS14-1 Sensitivity Analysis of Proximity Effects in Nearby Differential Lines (#1570240001) <i>Ludovico Badini, Flavia Grassi, Giordano Spadacini and Sergio A Pignari (Politecnico di Milano)</i>
9:00am	TH-AM-II-SS03-2 On the Sidelobe Reduction of Reflector Antenna's Radiation by Using Non-Periodic Grating Apertures (#1570237335) BEST SYMPOSIUM PAPER FINALIST★ <i>Shih-Chung Tuan (Oriental Institute of Technology), Chun-Chin Sun and Hsien-Kwei Ho (Yuan Ze University), Hsi-Tseng Chou (National Taiwan University)</i>	TH-AM-II-TC11-2 Fast Exact-Arithmetic O(N) Direct Volume Integral Equation Solver for Large-Scale Interconnect Extraction (Invited) (#1570247970) <i>Miaomiao Ma and Dan Jiao (Purdue University)</i>	TH-AM-II-SS14-2 Application of Reciprocity Theorem in Radio Frequency Interference Estimation (#1570236464) <i>Liang Li, Jingnan Pan (Missouri University of Science and Technology), Chulsoon Hwang, Gyuyeong Cho and Harkbyeong Park (Samsung Electronics, Korea), Jun Fan (Missouri University of S&T)</i>
9:20am	TH-AM-II-SS03-3 Radiated two stage MIMO OTA test method progress for Antenna Performance Evaluation (#1570240016) <i>Ya Jing, Hongwei Kong (Keysight), Moray Rumney (Keysight)</i>	TH-AM-II-TC11-3 A Modified FDTD Method using a Hybrid Cartesian-cylindrical Coordinate System (#1570239929) <i>Binghao Li and Y. DU (The Hong Kong Polytechnic University)</i>	TH-AM-II-SS14-3 Radiation Mechanism and Solution of Cable Attached Differential Signals (#1570239454) <i>Po-Jui Li, Ying-Cheng Tseng and Tzong-Lin Wu (National Taiwan University)</i>
9:40am	TH-AM-II-SS03-4 Shaped Reflector Antenna Design for Orthogonal Multi-beam Radiations at Millimeter Waves (#1570237230) <i>Hsi-Tseng Chou (National Taiwan University), Sheng-Ju Chou, Chih-Wei Chiu and Tsai-Wen Hsiao (Yuan Ze University)</i>	TH-AM-II-TC11-4 Investigation on Transient Responses of the Transmission Line in a Shelter by Using FDTD Method (#1570240109) <i>Xiao Han, and Jian Wang (University of Ningbo)</i>	TH-AM-II-SS14-4 FEM Modelling of Three-Phase Common Mode Choke for Performance Evaluation (#1570236598) <i>Yong Liu, Kye Yak See, Jih-Sheng Lai K. J. Tseng, Yitao Liu, Chin Foong Tong, Arie Nawawi, Shan Yin, and A. Sakanova (Nanyang Technological University)</i>
10:00 am	TH-AM-II-SS03-5 Phased array of pattern reconfigurable Yagi-Uda antennas (#1570237630) <i>C. Kittiyapunya (KMILT, Thailand), Monai Krairiksh (King Mongkut's Institute of Technology Ladkrabang)</i>	TH-AM-II-TC11-5 The Study of Magnetoacoustic Tomography with Magnetic Induction through Vector Source Reconstruction based on Real Model of Breast (#1570240185) <i>Wanjiao Hou, Shuai Zhang, Zhuo Wang and Guizhi Xu (Hebei University of Technology)</i>	TH-AM-II-SS14-5 Prediction of the Electromagnetic Radiation from Coupled Differential Microstrip Pairs Due to Skew and Imbalance (#1570239959) <i>Fengchao Xiao (UEC, Japan), Kimitoshi Murano (Tokai University), Yoshio Kami (UEC)</i>
10:20 am	TH-AM-II-SS03-6 Preliminary Design of 94 GHz E-band Phase Array Antenna for Future Mobile Communication (#1570240414) <i>Shen Shou Max Chung (National Yang Ming University), Yu-Chou Chuang (Yuan Ze University), Chun-Te Wu (Da-Yeh University), Han-Chang Hsieh (Bureau of Standards, Metrology & Inspection)</i>		

TECHNICAL SESSIONS – THURSDAY, MAY 19, 2016

Rooms	Narcissus A	Narcissus B	Open Forum
8:40am – 10:20pm	<p>SS11 Signal Integrity Modelling, Design and Validation – Bridging the Gap between Academic Research and Industrial Applications Chair(s): Xingchang Wei, Zhejiang University Xinjun Zhang, Intel Asia-Pacific Research & Development Ltd.</p>	<p>TS02 Topical Symposium on Smart Grid and Power Electronics EMC Chair(s): Wei Chen, Fuzhou University Shuo Wang, University of Florida</p>	
8:40am	<p>TH-AM-II-SS11-1 Two-dimensional Discontinuous Galerkin Time-Domain Method for Power Integrity Modeling (#1570239372) <i>En-Xiao Liu, Hui Min Lee, Si-Ping Gao (A*STAR Institute of High Performance Computing, Singapore), Ganesh Samudra (National University of Singapore, Singapore), Er Ping Li (Singapore Institute of High Performance Computing)</i></p>	<p>TH-AM-II-TS02-1 SiP Packaging-Compatible Magnetic Thin-Film Noise Suppressor to Countermeasure Digital Noise from Power Electronics Devices (invited) <i>M. Yamaguchi^{(a)(b)}, S. Tanaka^(b), Jingyan Ma^(a), Y. Miyazawa^(b), M. Nagata^(c), KKondo^(d), Y. Okiyoneda^(e), M. Nishizawa^(b) (a) Tohoku Univ., Sendai, (b)NICHC, Tohoku Univ., (c) Kobe Univ., Kobe, Hyogo, (d) NEC TOKIN Corporation, (e) Showa Aircraft Industry Co., Ltd.</i></p>	<p>Exhibition is open today from 9:00am to 5:00pm.</p>
9:00am	<p>TH-AM-II-SS11-2 Derive Crosstalk Limit From ICR (#1570240114) <i>Sherman Chen (Intel Corporation, P.R. China), Doron Lapidot (Amphenol-TCS Corporation, Japan)</i></p>	<p>TH-AM-II-TS02-2 Differential Mode (DM) EMI Noise Analysis for Three-phase Vienna Type Rectifiers (#1570242362) BEST SYMPOSIUM PAPER FINALIST★ <i>Rajib Goswami (UTSA, USA) Shuo Wang (University of Florida),</i></p>	
9:20am	<p>TH-AM-II-SS11-3 Signal Integrity Performance Degradation due to Temperature Variation in Systems with Re-drivers (#1570234129) <i>Xinjun Zhang, Weifeng Shu and Yinglei Ren (Intel Asia-Pacific Research & Development Ltd.), Chunfei Ye and Xiaoning Ye (Intel, USA)</i></p>	<p>TH-AM-II-TS02-3 Core Loss Analysis of Buck Converter under Chaotic PWM Based on ANSYS (#1570240342) <i>Bowei Zhu, Hong Li and Zhichang Yang (Beijing Jiaotong University)</i></p>	
9:40am	<p>TH-AM-II-SS11-4 Improved Common Mode Filter by Etching Slot on the Ground Plane (#1570237339) <i>Jianbo Zhang (Zhejiang University), Xuequan Yu (Huawei Technologies Co. LTD), Yufei Shu and Xing-Chang Wei (Zhejiang University)</i></p>	<p>TH-AM-II-TS02-4 Modeling of Common-mode Current in Motor Cable of Inverter-fed Motor Drive System (#1570239684) <i>Xiangyu Lu, Shuxue Zhang, Chen liu (State Grid Jilin Electric Power CO., LTD.), Pengkang Xie and Henglin Chen (Zhejiang University)</i></p>	
10:00am	<p>TH-AM-II-SS11-5 Miniature Optical Signal Transmission System for PDN Noise Measurement (#1570239588) <i>Guang-xiao Luo (North China Electric Power University), Xing-Chang Wei (Zhejiang University), Wei-dong Zhang (North China Electric Power University)</i></p>	<p>TH-AM-II-TS02-5 A 3-D Modeling of near field radiated electromagnetic interference for toroidal core (#1570237988) <i>Lei Guo, Yiming Duan, Wenjie Chen and Xu Yang (Xi'an Jiaotong University)</i></p>	
10:20am		<p>TH-AM-II-TS02-6 Common Mode EMI Noise Reduction Technique by Shielding Optimization in Isolated Converters (#1570239907) BEST SYMPOSIUM PAPER FINALIST★ <i>Shijun Yang, Qingbin Chen and Wei Chen (Fuzhou University)</i></p>	

TECHNICAL SESSIONS – THURSDAY, MAY 19, 2016

Rooms	Rose 1	Rose 2	Rose 3
01:30pm – 03:30pm	Industry Session <i>Organizer(s): Xu Yimin Wang Mengjun</i>	TS04 Topical Symposium on Bio-EM (A) <i>Chair(s): Guizhi XU, Hebei University of Technology Eung-Je WOO, Kyung Hee University</i>	TC03 Lightning <i>Chair(s): Yanzhao Xie, Xi'an Jiaotong University Zhao Yang, Nanjing University of Information Science Technology</i>
01:30pm	EMC Test and Design Technology <i>Xing Liwen, Compliance Direction Systems Inc.</i>	TH-PM-I-TS04-1 Connectome Study in Cervical Spinal Cord with Resting-state fMRI (#1570243432) <i>Xiaojia Liu and Yong Hu (The University of Hong Kong)</i>	TH-PM-I-TC03-1 Stability Improvement of FDTD Method for Buried Horizontal Wires (#1570239223) <i>Xiaojun Hu and Feng Xu (Nanjing University of Posts and Telecommunications)</i>
01:50pm		TH-PM-I-TS04-2 Combination of Applied Electric Field and Polyethylene Glycol Effectively Enhance Functional Recovery in Acute Spinal Cord Injury of Rats (#1570248436) <i>Aihua Wang, Guanghao Zhang, Xiaochen Wang, Cheng Zhang, Tao Song and Xiaolin Huo (Institute of Electrical Engineering, Chinese Academy of Sciences)</i>	TH-PM-I-TC03-2 Simulation research on coupling of metal cavity near the lightning channel based on rocket-triggered lightning experiment (#1570237153) <i>Kun Liu, Jie Ding and Shun Zhang (Chengdu University of Information and Technology)</i>
02:10am		TH-PM-I-TS04-3 Design of Front End and Frequency Synthesizer with Wireless Charging for Biomedical Communication (#1570238824) <i>Wen Cheng Lai and Ming-An Chung (National Taiwan University of Science and Technology)</i>	TH-PM-I-TC03-3 The Effect of Metal Layer Surround the Lightning Rod on Lightning Electromagnetic Field Distribution (#1570239712) <i>Ya-peng Fu, Cheng Gao, Bo Yang, Bi-hua Zhou (PLA University of Science & Technology)</i>
02:30pm		EMC Cases Analysis and Theory Introduction <i>Lei Guanghua, Würth Elektronik eiSos GmbH & Co. KG</i>	TH-PM-I-TS04-4 Design of a new Low-intensity Focused Ultrasound Stimulation System with Homogeneous Magnetic Field (#1570240028) <i>Shuai Zhang, Zhuo Wang, Wanjiao Hou, Mingkang Zhao and Guizhi Xu (Hebei University of Technology)</i>
02:50pm	EMC Cases Analysis and Theory Introduction <i>Lei Guanghua, Würth Elektronik eiSos GmbH & Co. KG</i>	TH-PM-I-TS04-5 The Role of the Skin Modeling in LF Dosimetry (#1570238922) <i>Valerio De Santis, Silvano Cruciani, Tommaso Campi and Mauro Feliziani (University of L'Aquila, Italy)</i>	TH-PM-I-TC03-5 The analyzing on the CG flashes based on the high-speed video camera from 2002 to 2015 (#1570239906) <i>Xiangzhen Kong and Yang Zhao (Nanjing University of Information Science Technology)</i>
03:10pm		TH-PM-I-TS04-6 Evaluation of EM Interference on Wearable ECG for Wireless Power Transfer System (#1570240030) <i>Jingjing Shi, Wei Liao and Jianqing Wang (Nagoya Institute of Technology)</i>	

TECHNICAL SESSIONS – THURSDAY, MAY 19 2016

Rooms	Narcissus A	Narcissus B	Open Forum
01:30pm – 03:30pm	<p>Plenary Session <i>Chair(s): Lijun Jiang, University of Hong Kong</i></p>		Interactive Forum Sessions
01:30pm	<p>Maxwell's Equations after 150 Years and the Role of Electromagnetics in EMC <i>Weng Cho Chew</i> <i>NAE, University of Illinois at Urbana-Champaign</i></p> <p>This presentation will discuss the history of different applications of electromagnetics in the past century. In the context of EMC, we will also discuss the source of measurement noise in electromagnetics, and their noise types. Ways to overcome different kinds of noise will be discussed. We will also discuss possible future directions in this area.</p>		<p>01:00-03:00pm Interactive Sessions</p> <p><i>The interactive sessions present the following technical topics in the poster session areas</i></p> <p>Smart Grid and Low Frequency EMC High Power EM System Level EMC</p>
02:30pm	<p>System Integration: Challenges and Opportunities <i>M. Swaminathan</i> <i>John Pippin Chair in Electromagnetics, Georgia Institute of Technology</i></p> <p>Form factor, weight, functionality, performance and low power are becoming some of the key drivers for applications in computing, communications, automotive and wearable electronics. These drivers are posing unique challenges for integrating systems. But, how can Electromagnetics and EMC engineers enable this trend? This represents an opportunity for all of us attending this symposium. This talk will focus on ongoing work in the area of antennas, switched mode power converters, wireless power transfer, EBG, multi-physics simulation, machine learning and signal integrity related issues in the context of system integration, which are all topics of this symposium.</p>		Exhibition is open today from 9:00am to 5:00pm.

INTERACTIVE FORUM SESSIONS – THURSDAY AFTERNOON, 19 MAY 2016

<i>19 May 2016, Thursday 1:00-3:30pm</i>	<i>Venue: Orchid Hall</i>
TH-PM-I FORUM SESSION-I: Smart Grid&Low Frequency EMC <i>Chair(s): Zhao Zhibin, North China Electric Power University</i>	TH-PM-I FORUM SESSION-I: High Power EM <i>Chair(s): Jun Dong, State Key Laboratory of CEMEE</i>
TH-PM-I-FOR-PS-01 Measurement and Analysis of Near-Field Electromagnetic Disturbances in UHVDC Converter Valve(#1570240049) <i>Yahui Hu, Weidong Zhang, Hao Hui and Lei Qi (North China Electric Power University); Feng Ji (State Grid Smart Grid Research Institute)</i>	TH-PM-I-FOR-HPEM-01 Study on Air Breakdown Experimental for Single HPM Pulse (#1570241341) <i>Junjie Hu, Daojie Yu, Jinjin Wei, Changlin Zhou and Shougou Zhao (Zhengzhou Institute of Information Science and Technology)</i>
TH-PM-I-FOR-PS-02 Novel Arc-Suppression Methods Based on Cascaded H-Bridge Converter(#1570239963) <i>Fangyao Wang, Moufa Guo and Gengjie Yang (Fuzhou University)</i>	TH-PM-I-FOR-HPEM-02 Shielding Effectiveness Assessment of Enclosure by Means of EMP Excitation (#1570238645) <i>Peng Chen, Congguang Mao and Gang Wu (Northwest Institute of Nuclear Technology)</i>
TH-PM-I-FOR-PS-03 On the Common Mode Current Due to Circuit Asymmetry in Three-Phase Motor Drive Systems(#1570239358) <i>Diego Bellan and Sergio A. Pignari (Politecnico di Milano, Italy)</i>	TH-PM-I-FOR-HPEM-03 Characteristic Parameter Estimations of EMP Energy Spectrum (#1570227800) <i>Qin Feng, Mao Congguang, Gang Wu and Hui Zhou (Northwest Institute of Nuclear Technology)</i>
TH-PM-I-FOR-PS-04 Asymmetric Selective Harmonic Elimination Technique using Partial Derivative for Cascaded Modular Active Rectifiers Tied to a Power Grid with Voltage Harmonics(#1570242782) <i>Amirhossein Moieni and Shuo Wang (University of Florida, USA)</i>	TH-PM-I-FOR-HPEM-04 Highest Frequency Estimation of HEMP Standard Waveforms (#1570238716) <i>Peng Chen, Congguang Mao and Gang Wu (Northwest Institute of Nuclear Technology)</i>
TH-PM-I-FOR-PS-05 Fast Modeling of Conducted EMI Phenomena Using Improved Classical Models(#1570239789) <i>Leila Fakhfakh (ENIS, Tunisia); Abdulrahman Alahdal (Umm Al-Qura University, Saudi Arabia); Anis Ammous (DEE-Umm Al Qura University-Makkah-Saudi Arabia, Saudi Arabia)</i>	TH-PM-I-FOR-HPEM-05 A Hybrid Method to Suppress Conducted EMI of Switch Power Supply (#1570239962) <i>Junpeng Ji, Xiangdong Zuo, Jingang Li and Qinghua Feng (Xi'an University of Technology)</i>
TH-PM-I-FOR-PS-06 Analysis of the Impact of Direct Lightning Smart Substation Overhead Ground Wire on the Station Smart Components(#1570240780) <i>Yaqi Yang Zhibin Zhao (North China Electric Power University, P.R. China); Shanqiang Gu, Di Li and Xiangxue Zeng (State Grid Electric Research Institute)</i>	TH-PM-I-FOR-HPEM-06 Optimal Radar Waveform for Parameter Estimation and Electromagnetic Compatibility(#1570257071) <i>Lulu Wang, Zhipeng Li, Guozhu Liu and Manxi Wang (State Key Laboratory of CEMEE)</i>
TH-PM-I-FOR-PS-07 LCL Filter Design and Analysis of Grid-Connected Converter for Power Quality and EMI Compliance(#1570237395) <i>Yitao Liu, Jianchun Peng, Guibin Wang and Huaizhi Wang (Shenzhen University); Kye Yak See (Nanyang Technological University, Singapore)</i>	TH-PM-I-FOR-HPEM-07 Reconfigurable Antenna Design for Cognitive Radio(#1570257919) <i>Manxi Wang, Yongcheng Li and Guozhu Liu (State Key Laboratory of CEMEE,); Longfang Ye (Xiamen University)</i>
TH-PM-I-FOR-PS-08 Computation of Transient Electromagnetic Field Emission From GIS Enclosure During Disconnecter Switching Operations (#1570239683) <i>Yadong Liu, (Electric Power Research Institute of State Grid Jilin Electric Power CO,); Guoqing Cao (Jilin Electric Power CO., LTD., P.R. China), Kuo Su (Electric Power Research Institute of State Grid Jilin Electric Power CO,), Pengkang Xie and Henglin Chen (Zhejiang University,)</i>	TH-PM-I-FOR-HPEM-08 Composite Electromagnetic Field Estimation Method Based on Element Field Decomposition and Superposition (#1570258213) <i>Jun Dong, Lina Hong and Jie Meng (State Key Laboratory of CEMEE)</i>
TH-PM-I-FOR-PS-09 EMI Analysis of Hybrid HVDC Breaker (#1570246009) <i>Mustafa Alrayah Hassan, Yu Hai, Chi Song and Yongjian Li (Hebei University of Technology); Er Ping Li (Zhejiang University)</i>	TH-PM-I-FOR-HPEM-09 The Method of Building Equivalent Electromagnetic Environment (#1570258263) <i>Jun Dong, Xiuying Pu and Hui Han (State Key Laboratory of CEMEE)</i>
TH-PM-I-FOR-PS-10 EMI Analysis of Hybrid HVDC Breaker (#1570246009) <i>Mustafa Alrayah Hassan, Yu Hai, Chi Song and Yongjian Li (Hebei University of Technology); Er Ping Li (Zhejiang University)</i>	TH-PM-I-FOR-HPEM-10 The Simulation Method of statistical MIMO Radar's Clutter (#1570258271) <i>Guangyong Zheng, Yonghu Zeng and Lei Gao (State Key Laboratory of CEMEE)</i>

INTERACTIVE FORUM SESSIONS – THURSDAY AFTERNOON, 19 MAY 2016

19 May 2016, Thursday 1:00-3:30pm		Venue: Orchid Hall	
TH-PM-I- FORUM SESSION-I: System Level EMC <i>Chair(s): Zhang Qiang (Nanjing Research Institute of Electronics Technology) and Hyun Ho Park(University of Suwon)</i>			
TH-PM-I-FOR-SYS-01 A Study on Characteristics of Electromagnetic Waves Propagating through the Space between Overlapped Metal Plates: Part-II (#1570239951) <i>Yuichi Watanabe (JFE Steel Corporation)</i>	TH-PM-I-FOR-SYS-09 Identification and Solution of EMI Influences on Transformer Windings Temperature Measurement (#1570239897) <i>Xiangming Zhang, Chen Deng, Jianxuan Li, Zhihua Zhao and Lei Zhang (Naval University of Engineering)</i>		
TH-PM-I-FOR-SYS-02 Inner Filled Constructive Material Effect on Shielding Effectiveness of Screened Electronics in Resonance Regime (#1570236274) <i>Valentin Butin and Pavel Kundyshv (All-Russia Research Institute of Automatics, Russia)</i>	TH-PM-I-FOR-SYS-10 Evaluation of Fibre Weaving of Substrate on Differential Striplines Using an Analytical Approach (#1570239903) <i>Eng Kee Chua, Junwu Zhang and Kye Yak See (Nanyang Technological University, Singapore); Wee Jin Koh and Weng Yew Chang (DSO National Laboratories, Singapore)</i>		
TH-PM-I-FOR-SYS-03 Radiated Emission and Signal Integrity Analysis on the Folded Flexible Printed Circuit Cable (#1570238865) <i>Boon Ping Koh (Intel Microelectronics Sdn. Bhd., Malaysia); Chun Tong Chiang (CST, Malaysia)</i>	TH-PM-I-FOR-SYS-11 A Wideband MSL-to-WR Transition for Millimeter Wave Application (#1570248151) <i>Bin Deng, Qiang Zhang (Nanjing University)</i>		
TH-PM-I-FOR-SYS-04 Circuit Model for Field-Wire Coupling of Electrically Small Irregular Wire Structures (#1570238083) <i>Bing Li, Junjun Wang, Xinwei Song and Donglin Su (Beihang University)</i>	TH-PM-I-FOR-SYS-12 A Novel Multi-Channel and High-Power Microwave Rotary Joint (#1570248161) <i>Bin Deng, Qiang Zhang(Nanjing University)</i>		
TH-PM-I-FOR-SYS-05 Experimental Study on the Statistical Response of Nonlinear Element in an Electrically Large Cavity (#1570240150) <i>Zhangshuai Cao, Liping Yan, Yuan Zhao and Xiang Zhao (Sichuan University)</i>	TH-PM-I-FOR-SYS-13 Numerical Design of Dual-Beam Open-end Waveguide Antenna Array for the Angular Diversity at Millimeter Waves (#1570237229) <i>Hsi Tseng Chou (National Taiwan University); Honglin Jian (Yuan Ze University)</i>		
TH-PM-I-FOR-SYS-06 Shielding Effectiveness of Enclosures with Aperture Arrays Excited by Obliquely Incident Plane Wave (#1570240166) <i>Baolin Nie, Pingan Du and Pei Xiao (University of Electronic Science and Technology of China)</i>	TH-PM-I-FOR-SYS-14 Comparison Analysis of Calculation Results for Target Scattering Cross Section Based on Feature Selective Validation(#1570258657) <i>Yonghu Zeng, Lei Gao, Liandong Wang and Jinliang Li (State Key Laboratory of CEMEE)</i>		
TH-PM-I-FOR-SYS-07 Synthesis of Circle-Polarized Planar Array Antennas to Produce Near-Field Contoured Patterns (#1570239411) <i>Nannan Wang and Liqing Wang (Harbin Institute of Technology); Hsi-Tseng Chou (National Taiwan University)</i>	TH-PM-I-FOR-SYS-15 Research on Calculation Method of A Transmission Line System Coupling with Electromagnetic Field(#1570258787) <i>Chuanchuan Wang, Rui Jia and Liandong Wang (State Key Laboratory of CEMEE)</i>		
TH-PM-I-FOR-SYS-08 Steady-state Analysis of the Adaptive Interference Cancellation System Using Automatic Gain Control Technique (#1570239594) BEST STUDENT PAPER FINALIST★★ <i>Jian Tang, Zhihua Zhao, Yi Li, Jin Meng, Fangmin He, Wei Li and Wenlu Li (Naval University of Engineering)</i>	TH-PM-I-FOR-SYS-16 Shielding Evaluation Method of Metallic Shielding-cans Using Transfer Function to Antenna (#1570240356) <i>Jae Deok Lim (Global Technology Center, Samsung Electronics, Korea), Chulsoon Hwang (EMC Laboratory, Missouri University of Science and Technology, USA), Gyu Yeong Cho, Hye In Park and Hark Byeong Park (Global Technology Center, Samsung Electronics, Korea), Ji-Seong Kim (Electrical Engineering, Suwon Science College, Korea); Hyun Ho Park (University of Suwon, Korea)</i>		

TECHNICAL SESSIONS – THURSDAY, MAY 19, 2016

Rooms	Rose 1	Rose 2	Rose 3
03:50pm – 05:50pm	Industry Session Organiser: <i>Xu Yimin</i> <i>Wang Mengjun</i>	TU05 EM Functional Safety <i>Organizer(s): Keith Armstrong,</i> <i>Cherry Clough Consultants Ltd</i>	SS01 4G RF &Antenna measurement advances <i>Chair(s): Yan Zhao, The 7th Research Institute of China Electronics Technology Group Corporation,</i> <i>Gao Feng, China Mobile Group Design Institute</i>
03:50pm	Mobile Antenna Design Optimization using Vector SAR Measurement Technology <i>Benoit Derat,</i> <i>CEO , ART-Fi SAS</i>	TH-PM-II-TU05-1 Electromagnetic Functional Safety <i>Keith Armstrong, Cherry Clough Consultants Ltd, United Kingdom</i> <i>This Tutorial presents the cost-effective approach developed by the Institution of Engineering and Technology (IET, which used to be the IEE), London, U.K., which was first published in 2013 and is the subject of a new IET Code of Practice on “Electromagnetic Resilience for Functional Safety”. This approach is now the basis of two new IEC standards, and the subject of a new IEEE Standard: “Managing Risks with Regard to Electromagnetic Disturbances”.</i>	TH-PM-II-SS01-1 An Advanced Test System for the Passive Intermodulation Measurement of POI (#1570238870) <i>Xin-Hai Lin (The 7th Research Institute of CETC,), Yong Zou (China Tower co., Ltd, P.R. China), Shu-Min Xie (Huawei Technologies Co. Ltd, P.R. China), Xu-Pu Zhang and Hao-Fa Wu (Jointcom Communication Technology Co. Ltd,)</i>
04:10pm			TH-PM-II-SS01-2 A Numerical Investigation of the Effects on Base Station Antenna due to Cuboid Antenna-Radome (#1570238823) <i>Yu-Ting Wu, Yan Zhao, Xin-Hai Lin, and Guo-Xing Zhang (The 7th Research Institute of China Electronics Technology Group Corporation)</i>
04:30pm			TH-PM-II-SS01-3 Several Major Methods for TIS Test (#1570240104) <i>Penghui Shen (General Test Systems, P.R. China), Yihong Qi, Wei Yu, Fuhai Li (DBJ Technologies, Canada), Jun Fan (Missouri University of Science and Technology)</i>
04:50pm	Modern EMC Receiver Technologies for Existing and Emerging Test Applications <i>Mark Terrien, Keysight</i> <i>Worldwide EMC Business Manager</i>		TH-PM-II-SS01-4 A Review of Antenna Radiation Measurement Environment (#1570238892) <i>Li-Ling Zhou, and, Yan Zhao (The 7th Research Institute of China Electronics Technology Group Corporation)</i>
05:10pm			TH-PM-II-SS01-5 Radiated two stage method for 4G MIMO OTA test (#1570239534) <i>Wei Yu (Shenzhen General Test Systems, P.R. China), Yihong Qi (DBJ Technologies, Canada), Lie Liu (Shenzhen General Test Systems)</i>
05:30pm		TH-PM-II-SS01-6 OTA measurement for R&D (#1570240103) <i>Penghui Shen, Zixin Liu(Shenzhen General Test Systems, P.R. China), Yihong Qi, Wei Yu (DBJ Technologies, Zhuhai), and Jun Fan (Missouri University of Science and Technology)</i>	

TECHNICAL SESSIONS – THURSDAY, MAY 19, 2016

Rooms	Narcissus A	Narcissus B	Open Forum
03:50pm – 05:50pm	TC10 SI and PI (B) <i>Chair(s):</i> <i>A. Bradley, NASA Langley Research Center</i> <i>Ke-Li Wu, Chinese University of Hong Kong</i>	TU06 Smart Grid Support and EMC Issues <i>Organizer(s):</i> <i>Donald Heirman, Don HEIRMAN Consultants</i>	Interactive Forum Sessions
03:50pm	TH-PM-II-TC10-1 A Derived Physics-based Quasi-Static Circuit Model for Signal Integrity Analysis (Invited) (#1570239167) Yuhang Dou (The Chinese University of Hong Kong, Hong Kong), Ke-Li Wu (Chinese University of Hong Kong)	TH-PM-II-TU06-1 Immunity for power station and substation environments <i>William Radasky</i> <i>Metatech, USA</i>	03:30-5:30pm Interactive Forum Sessions <i>The interactive sessions present the following technical topics in the poster session areas</i> <i>Signal Integrity and Power Integrity</i> <i>IC EMC</i> <i>Modeling and Simulation</i>
04:10pm	TH-PM-II-TC10-2 A Study of Dipole Approximation As Noise Sources (Invited) (#1570242328) <i>Jingnan Pan (Google Inc, USA) and Jun Fan (Missouri University of Science and Technology)</i>	TH-PM-II-TU06-2 US Smart Grid Interoperability Panel (SGIP 2.0) and its Testing and Certification Committee <i>Donald Heirman,</i> <i>Don HEIRMAN Consultants, USA</i>	
04:30pm	TH-PM-II-TC10-3 Analysis on Via Design for Impedance Mismatch Minimization in High Speed Channel (#1570240056) BEST STUDENT PAPER FINALIST★★ <i>Jaemin Lim, Heegon Kim, Dong-Hyun Kim and Yeseul Jeon (KAIST, Korea), Koh Wee Jin and Weng Yew Chang (DSO National Laboratories, Singapore), Joungho Kim (KAIST, Korea)</i>	TH-PM-II-TU06-3 Application of selected EMC Standards by the SGIP Electromagnetic Interoperability Issues Working Group (EMIWG) <i>Donald Heirman,</i> <i>Don HEIRMAN Consultants, USA</i>	Exhibition is open today from 9:00am to 5:00pm.
04:50pm	TH-PM-II-TC10-4 Fast Correlations of Pre-silicon Integrated Chip-Package-Board DDR4-2133 Memory Channel Simulations with Silicon Measurements via Active Signal Probing - A case study (#1570239032) <i>Koay Soon Chan and Wei Khoon Teng (Marvell Semiconductor Inc., Malaysia)</i>	TH-PM-II-TU06-4 EMC between communications circuits and power systems in the frequency range 2 kHz to 150 kHz <i>David Thomas,</i> <i>University of Nottingham, UK</i>	
05:10pm	TH-PM-II-TC10-5 A Comparison Between Latency Insertion Method and Relaxation Method in Transient Thermal Analysis (#1570237624) <i>Anh Ngo, Tadatashi Sekine and Hideki Asai (Shizuoka University)</i>		

INTERACTIVE FORUM SESSIONS – THURSDAY AFTERNOON, 19 MAY 2016

<i>19 May 2016, Thursday 3:30-5:30pm</i>	<i>Venue: Orchid Hall</i>
TH-PM-II FORUM SESSION-II: IC EMC <i>Chair(s): Wang Mengjun, Hebei University of Technology</i>	TH-PM-II FORUM SESSION-II: Modeling and Simulation <i>Chair(s): Boyuan Zhu, Griffith University</i>
TH-PM-II-FOR-ICEM-01 The Impact of I/O Supply Voltage Scaling on Radiated EMI (#1570239889) <i>Dam Minh Tung, Nguyen Van Toan and Jeong Gun Lee (Hallym University, Korea)</i>	TH-PM-II-FOR-CEM-01 Optimum Design Approach of High Frequency Transformer (#1570239800) <i>Sobhi Barg, Kaiçar Ammous and Hanen Mejbri (University of Sfax, Tunisia); Abdulrahman Alahdal and Anis Ammous (DEE-CEIA, Umm Al Qura University, Saudi Arabia)</i>
TH-PM-II-FOR-ICEM-02 Investigation on EFT Effects in a Low Dropout Voltage Regulator (#1570238067) <i>Yan Huang and Chuangwei Li (NUDT, P.R. China); Jianfei Wu (Tianjin Binhai Civil-military Integrated Innovation Institute, P.R. China), Wei Zhu (Xiangtan University)</i>	TH-PM-II-FOR-CEM-02 A Global Optimized Parameter to Reduce the Numerical Dispersion of the LOD-FDTD Method (#1570240032) <i>Min Su and Peiguo Liu (National University of Defense Technology)</i>
TH-PM-II-FOR-ICEM-03 Conducted Emission of I/O Pins beside Power Pairs of A Microcontroller Integrated Circuit (#1570241277) <i>Shuai Ma (Guangdong University of Technology); Min Pan, Wenxiao Fang and Ping Lai (CEPREI Laboratory);</i>	TH-PM-II-FOR-CEM-03 Harmonic Balance FEM and Its Application in Power System and Renewable Energy Systems (#1570237404) <i>Junwei Lu (Griffith University, Australia); Xiaojun Zhao (North China Electric Power University);</i>
TH-PM-II-FOR-ICEM-04 ESD Test at Component Level (#1570236118) <i>Lars Glaesser and Sven Koenig (EMC, Germany)</i>	TH-PM-II-FOR-CEM-04 Solution of 3-Dimensional Electromagnetics Radiation Problems by Using Time-Domain Finite Element Method with Parallel Solvers (#1570235101) <i>Xia Wu and Yu Zhou (Tongji University)</i>
TH-PM-II-FOR-ICEM-05 Electrical Characteristics of Flip-Chip Package Interconnection (#1570244032) <i>Hongbin Li, Quanming Zhao and Panpan Zuo (Hebei University of Technology)</i>	TH-PM-II-FOR-CEM-05 Length Determination of Equivalent Lines in Asymptotic Approach for High-frequency Filed Coupling to Transmission Lines (#1570240144) <i>Chunying Zhao, Liping Yan, Xiang Zhao and Kama Huang (Sichuan University)</i>
TH-PM-II-FOR-ICEM-06 A Parasitic Extraction Method of PIN Diode Based on Analysing Ringing in SMPS (#1570240084) <i>Kaixiang Zhu, Donglin Su, Hui Xu and Xiaofan Shang (Beihang University)</i>	TH-PM-II-FOR-CEM-06 A Novel Data Pattern Dependent Electromagnetic Emission Modeling for High Speed Multi-Channel Interconnects (#1570240027) <i>Nick K. H. Huang (ASUSTek Computer Inc., Taipei, Taiwan); Lijun Jiang (University of Hong Kong, Hong Kong); Xingyun Luo, Huichun Yu and Huasheng Ren (Huawei Technologies Co., Ltd. Shenzhen)</i>
TH-PM-II-FOR-ICEM-07 An Improved Model of LDMOS Power Amplifier for Effectively Suppressing Metallic Shielding Cover Effects (#1570239553) BEST STUDENT PAPER FINALIST★ ★ <i>Liang Lin, Liang Zhou, Wenyan Yin and Junfa Mao (Shanghai Jiaotong University); Yi Zhu (Ampleon Semiconductors (Shanghai) Co., Ltd);</i>	TH-PM-II-FOR-CEM-07 Conformal FDTD Method for Simulating the Interaction of an EMP with Multiple PEC/Dielectric Wedge Structures (#1570244641) <i>Hao Xie, Xiang Yuan, Wenyan Yin and Erping Li (Zhejiang University); Zhengguo Zhao and Haijing Zhou (Institute of Applied Physics and Computational Mathematics, Beijing)</i>
TH-PM-II-FOR-ICEM-08 Noise Analysis in Injection Locked Frequency Divider Using Frequency Modulation (#1570245630) <i>Hanbiao Jin, Xiaopeng Yu and Erping Li (Zhejiang University)</i>	TH-PM-II-FOR-CEM-08 Bayesian Assessment Method of Device-Level Electromagnetic Pulse Effect based on Markov Chain Monte Carlo (#1570239945) <i>Yuhao Chen, Kejie Li and Yanzhao Xie (Xi'an Jiaotong University)</i>

INTERACTIVE FORUM SESSIONS – THURSDAY AFTERNOON, 19 MAY 2016

<i>19 May 2016, Thursday 3:30-5:30pm</i>		<i>Venue: Orchid Hall</i>	
TH-PM-II FORUM SESSION-II: Modeling and Simulation (cont'd) <i>Chair(s): Yaojiang Zhang, Huawei Technologies</i>	TH-PM-II FORUM SESSION-II: Signal Integrity and Power Integrity <i>Chair(s): Koh Wee Jin, DSO National Laboratories</i>		
TH-PM-II-FOR-CEM-09 Transient Thermal Analysis by Discontinuous Galerkin Time Domain (DGTD) Method (#1570239714) Yilin Dong (Shanghai Jiao Tong University); Ping Li (Purdue University, USA); Min Tang and Junfa Mao (Shanghai Jiao Tong University)	TH-PM-II-FOR-SI-01 Electromagnetic Radiation as Informative Sign upon Detection of Hidden Defects in Electronic Equipment (#1570239363) <i>Dianov, V.N. and Semin V.G (Russian State Social University, Russia)</i>		
TH-PM-II-FOR-CEM-10 An Analytical Approach for Calculating Load Response of a Transmission Line with Interference Source in Interconnected Equipment (#1570240040) <i>Pei Xiao, Pingan Du and Baolin Nie (University of Electronic Science and Technology of China)</i>	TH-PM-II-FOR-SI-02 Power and Signal Integrity Challenges in the Detachable Bidirectional Instrument Bus Design (#1570239377) <i>Lingyun Ye, Caixia Li, Xinglin Sun and Kaichen Song (Zhejiang University)</i>		
TH-PM-II-FOR-CEM-11 GPU Acceleration for Phase Retrieval for Electromagnetic Interference Source Image (#1570238313) <i>Yanju Zhu and Shuguo Xie (Beijing University of Aeronautics and Astronautics)</i>	TH-PM-II-FOR-SI-03 Cavity Model Area Fills - Limitations and Improvements of Parallel Plate (#1570245868) <i>Hanqin Ye, Han-Biao Jin, Er-Ping Li (Zhejiang University), Chenxi Huang, Siqi Bai, Biyao Zhao, and James Drewniak (Missouri University of Science and Technology)</i>		
TH-PM-II-FOR-CEM-12 The Influence of Ice Particles on Microwave Propagation in Thundercloud (#1570236900) <i>Mantang Su, Jiaqing Chen, Yu Zhang and Jie Yang (PLA University of Science and Technology)</i>	TH-PM-II-FOR-SI-04 Analysis of Vertical PCB Connector Induced Via Stub Reduction in High Speed Serial Link (#1570238506) <i>Dong Hyun Kim, Heegon Kim, Jaemin Lim and Yeseul Jeon (KAIST, Korea); Wee Jin Koh and Weng Yew Chang Richard (DSO National Laboratories, Singapore); JoungHo Kim (KAIST, Korea)</i>		
TH-PM-II-FOR-CEM-13 The Application and Design Strategy of Bio-inspired Electromagnetic Protection Technology Based on Cell Signal Transduction (#1570239918) <i>Duyan Geng, Gang Hu and Guizhi Xu (Hebei University of Technology)</i>	TH-PM-II-FOR-SI-05 Total Ionizing Dose Effects on MOS Transistors Fabricated in 0.18 μm CMOS Technology (#1570239017) <i>Varvara Bezhenova and Alicja Michalowska-Forsyth (Graz University of Technology, Austria)</i>		
TH-PM-II-FOR-CEM-14 Ultrasound Transducer and Amplifier Design in Transcranial Ultrasound Stimulation System (#1570240136) <i>Xun Shi, Shuai Zhang, Zhuo Wang and Guizhi Xu (Hebei University of Technology)</i>	TH-PM-II-FOR-SI-06 Pin Assignment Optimization for Large-Scale BGA Packages Using Simulated Annealing (#1570238467) <i>Zhuoyue Li, Mushui Zhang and Hongzhou Tan (Sun Yat-Sen University)</i>		

TECHNICAL SESSIONS – FRIDAY, MAY 20, 2016

Rooms	Rose 1	Rose 2	Rose 3
8:40am – 10:20am	SS04 EMC Aspects of Lightning <i>Chair(s): Jinliang He, Tsinghua University</i> <i>Yoshihiro Baba, Doshisha University</i>	TC11 CEM and Multiphysics (B) <i>Chair(s): Frank Leferink, University of Twente</i> <i>Dipanjan Gope, India Institute of Science</i>	SS17 IEMI <i>Chair(s): William A Radasky, Metatech Corporation</i>
8:40am	FR-AM-I-SS04-1 2D FDTD Simulation of LEMP Propagation Considering the Presence of Conducting Atmosphere (#1570232933) <i>Thang H. Tran (National Institute of Technology, Tsuruoka College, Japan), Yoshihiro Baba (Doshisha University), Vladimir Rakov and Vijaya B. Somu (University of Florida, USA)</i>	FR-AM-I-TC11-1 Improved Hybrid Leapfrog ADI-FDTD Method for Simulating Complex Electromagnetic Environment Effects (E3) on a Warship with Multi-Wire Antennas (#1570248145) BEST STUDENT PAPER FINALIST★★ <i>Zhuo-xian Liang, Hao Xie and Yang Guo (Zhejiang University), Jian Wang (University of Ningbo), Er-Ping Li and Wenyan Yin (Zhejiang University)</i>	FR-AM-I-SS17-1 Methodical Principles of a Choice of Simulators for Tests of Electronic Devices for Immunity to Ultrashort EMPs (#1570238162) <i>Yury Parfenov, Leonid N. Zdoukhov, Vladimir M. Chepelev, Boris A. (Russian Academy of Sciences, Russia) Titov, William A. Radasky (Metatech Corporation, USA)</i>
9:00am	FR-AM-I-SS04-2 Overview of the Three-Dimensional FDTD-Based Surge Simulation Code VSTL REV (#1570239954) <i>Akiyoshi Tatematsu (Central Research Institute of Electric Power Industry, Japan)</i>	FR-AM-I-TC11-2 Smart Design Specific Electromagnetic Solvers for Chip-Package-Systems (Invited) (#1570245924) <i>Dipanjan Gope (IIS, India), Gourav Chatterjee (Robert Bosch Engineering Business Solution Limited, India), Arkaprov Das and Nikita Ambasana (IIS, India)</i>	FR-AM-I-SS17-2 Design of A 500kV Pulse Generator with the Rise Time of Nanosecond Level (#1570240111) <i>Yanpeng Ge, Yanzhao Xie and Zhanyu Li (Xi'an Jiaotong University)</i>
9:20am	FR-AM-I-SS04-3 TAES: A PEEC-Based Tool for Transient Simulation (#1570239957) <i>Hongcai Chen, Zilong Qin, Y. DU (The Hong Kong Polytechnic University, Hong Kong), Qinghai Wang, Yu Ding (Huawei Technologies Co. Ltd)</i>	FR-AM-I-TC11-3 The Equivalent Circuit Model for Electrostatic and Magnetostatic Biased Tunable Graphene As the Absorption Material (#1570239640) BEST STUDENT PAPER FINALIST★★ <i>Ying S. Cao and Lijun Jiang (University of Hong Kong, Hong Kong), Albert Ruehli (Missouri University of S & T)</i>	FR-AM-I-SS17-3 Empirical Formula of Effective Coupling Length for HEMP Coupling with Transmission Lines and Its Application (#1570236372) <i>Haiyan Xie, Yong Li and Jianguo Wang (Northwest Institute of Nuclear Technology)</i>
9:40am	FR-AM-I-SS04-4 Design of Transmission Tower Grounding Electrodes for Lightning Protection Systems (#1570239898) <i>P. Yuthagowith (King Mongkut's Institute of Technology Ladkrabang, Thailand, Thailand)</i>	FR-AM-I-TC11-4 Enhanced Circuit Simulation using Mutual Coupling Parameters obtained via 3D Field Extraction (#1570237677) <i>Niek Moonen, Frits Buesink and Frank Leferink (University of Twente, The Netherlands)</i>	FR-AM-I-SS17-4 Correlation Study of Geomagnetic Sudden Storm Commencements (SSCs) (#1570242133) <i>William A. Radasky, Edward Savage and James Gilbert (Metatech Corporation)</i>
10:00am	FR-AM-I-SS04-5 The Applicability Analysis of Aerial Line Model for Power System Electromagnetic Transients Simulation (#1570239479) <i>Zhifeng Wang, Xin Liu and Guishu Liang (North China Electric Power University)</i>	SA-PM-I-TC13-4 Indoor Wireless Channel Analysis Using Alternating Direction Implicit Pseudospectral Time-Domain Method (#1570239817) <i>Hong-Xing Zheng (Hebei University of Technology)</i>	FR-AM-I-SS17-5 Calculation of High Electromagnetic Pulse Coupling to Lossy Transmission Line Based on DEPACT Macromodel (#1570240117) <i>Ziweihua Du and Yanzhao Xie (Xi'an Jiaotong University)</i>
10:20am			FR-AM-I-SS17-6 Experimental Study on the Magnetic Field Shielding Property of CFRP (#1570239615) <i>Qing Si, Zhengyu Huang, Lihua Shi, Yinghui Zhou, Mingxin Du and Wenwen Jiang (PLA Uni of Sci and Tech.)</i>

TECHNICAL SESSIONS –FRIDAY, MAY 20, 2016

Rooms	Narcissus A	Narcissus B	Open Forum
8:40am – 10:20am	<p>TC 15 Antennas and Propagation (A) <i>Chair(s): Xianmin Zhang, Zhejiang University</i> Sangwook Nam, Seoul National University</p>	<p>TC08 Smart Power and Low Freq EMC <i>Chair(s): Donald Heirman, Don HEIRMAN Consultants</i> Boyuan Zhu, Griffith University</p>	
8:40am	<p>FR-AM-I-TC15-1 An Electrically Small Dualband Isotropic Antenna Using Folded Split Ring Resonators (Invited) (#1570246158) <i>Joon-Hong Kim and Sangwook Nam (Seoul National University)</i></p>	<p>FR-AM-I-TC08-1 Examination of the Low Voltage System in the Frequency Range up to 500 kHz with regard to Data Transmission by Powerline Communication (#1570237674) <i>Mike Trautmann, Sebastian Jeschke, Sascha Grigo, Margarethe Malek and Holger Hirsch (University of Duisburg-Essen, Germany)</i></p>	Exhibition is open today from 9:00am to 5:00pm.
9:00am	<p>FR-AM-I-TC15-2 Generation and Propagation Characteristics of OAM Radio Waves (Invited) (#1570245807) <i>Shilie Zheng and Xianmin Zhang (Zhejiang University)</i></p>	<p>FR-AM-I-TC08-2 Assessment of Power Quality in a Microgrid with Power Electronic Converters (#1570240135) <i>Preye Ivry, David Thomas and Mark Sumner (University of Nottingham)</i></p>	
9:20am	<p>FR-AM-I-TC15-3 Antenna Metrology 100-500 GHz: A New Approach (Invited)(#1570240481) <i>Perry F. Wilson, Joshua A. Gordon, David R. Novotny and Jeffrey R. Guerrieri (National Institute of Standards and Technology, USA)</i></p>	<p>FR-AM-I-TC08-3 Electromagnetic Interference Investigation of Solar PV System for Micro-Grid Structure (#1570239562) <i>Boyuan Zhu, Domagoj Leskarac and Junwei Lu (Griffith University, Australia), Michael Wishart (Power IQ PTY LTD, Australia), Michael Wishart (Power IQ Pty Ltd)</i></p>	
9:40am	<p>FR-AM-I-TC15-4 A Wideband Stepped Monocone Antenna Design (Invited) (#1570239231) <i>Ankang Liu and Yilong Lu (Nanyang Technological University)</i></p>	<p>FR-AM-I-TC08-4 The overvoltage of interrupting off-load transmission line with series-resonant type fault current limiter (#1570236130) <i>Bin Li, Qingquan Li, Hongshun Liu and Mingming Han (Shandong University), Zhenning Huang and Jiangtao Wang (State Grid Shandong Electric Power Company)</i></p>	
10:00am	<p>FR-AM-I-TC15-5 Design and Realization of Planar Reflector Based on Artificial Magnetic Conductor at S-Band Frequency (#1570238755) <i>Dwi Mandaris, Frits Buesink and Frank Leferink (University of Twente, The Netherlands), Achmad Munir (Institut Teknologi Bandung, Indonesia)</i></p>	<p>FR-AM-I-TC08-5 Analytical Calculation of Conducted EMI in Flyback Converters (#1570239232) BEST SYMPOSIUM PAPER FINALIST★ <i>Jianquan Lou, Quanhui Sun, Wei You and Yingchun Shu (CISCO), Alpesh Bhobe (CISCO), Jinghan Yu (CISCO)</i></p>	

TECHNICAL SESSIONS –FRIDAY, MAY 20, 2016

Rooms	Rose 1	Rose 2	Rose 3
10:40am – 12:20pm	<p>SS04 EMC Aspects of Lightning <i>Chair(s): Jinliang He, Tsinghua University</i> <i>Yoshihiro Baba, Doshisha University</i></p>	<p>SS10 ESD Protection Techniques for Circuits and Systems <i>Chair(s): Chun-Yu Lin, National Taiwan Normal University</i></p>	<p>WS05 Improved EMC Test Methods in Industrial Environments <i>Organizer(s): Dongsheng Zhao; VSL, Dutch Metrology Institute, The Netherlands</i></p>
10:40am	<p>FR-AM-II-SS04-1 Relationship between Grounding Potential Rise and Insulator Voltage (#1570240194) <i>Jinpeng Wu and Jinliang He (Tsinghua University)</i></p>	<p>FR-AM-II-SS10-1 Study of Alternative Test Method of CDM Test Method on the Wafer (#1570240034) <i>Masanori Sawada, Taizo Shintani, Keiichi Hasegawa (Hanwa Electronic Ind. Co., Ltd., Japan)</i></p>	<p>Alternative Conducted Emission Test Methods Based On RF Impedance Measurement <i>Soydan ÇAKIR, TÜBİTAK UME, Turkey</i></p>
11:00am	<p>FR-AM-II-SS04-2 Application of a Subgridding Technique to a 3D CIP-based Electromagnetic Field Analysis Using the Hermite Interpolation (#1570233227) <i>Satoru Kobayashi, Yuta Suzuki, Yoshihiro Baba and Naoto Nagaoka (Doshisha University)</i></p>	<p>FR-AM-II-SS10-2 Transient Voltage Suppressor Based On Diode-Triggered Low-Voltage Silicon Controlled Rectifier (#1570239166) <i>Xiang Li, Shurong Dong, Zhihui Yu, Jie Zeng and Weihuai Wang (Zhejiang University)</i></p>	<p>Alternative Radiated Emission Test Methods <i>Mohammed Salhi, TÜBİTAK UME, Turkey</i></p>
11:20am	<p>FR-AM-II-SS04-3 Modelling of Effect of Propagation of Lightning Electromagnetic Pulse over Rough Ground (#1570237524) <i>Tao Lu and Mingli Chen (The Hong Kong Polytechnic University)</i></p>	<p>FR-AM-II-SS10-3 A Wafer-level Characterization Method of ESD Protection Circuits for Both Component-level and System-level Applications (#1570237400) <i>Yuan Wang, Guangyi Lu and Xing Zhang (Peking University)</i></p>	<p>In-situ Impedance Measurement for Stationary EUTs <i>Dongsheng Zhao, VSL, Dutch Metrology Institute, The Netherlands</i></p>
11:40am	<p>FR-AM-II-SS04-4 FDTD Surge Simulation of a Vertical Grounding Rod Considering Soil Ionization (#1570238529) <i>Fan Zhang, Hiroki Tanaka, Yoshihiro Baba and Naoto Nagaoka (Doshisha University)</i></p>	<p>FR-AM-II-SS10-4 A Gigahertz Low-Noise Amplifier with ESD Protection in Nanoscale CMOS Technology (#1570235014) <i>Chun-Yu Lin (National Taiwan Normal University), Rong-Kun Chang and Ming-Dou Ker (National Chiao-Tung University)</i></p>	<p>Radiated Emission Measurement using 2-Channel Vector Signal Analyzer <i>Michitaka AMEYA, National Metrology Institute of Japan (NMIJ), Japan</i></p>
12:00pm	<p>FR-AM-II-SS04-5 Analysis of Buried Grounding Systems Based on Full-Wave Model (#1570240632) <i>Feng Xu and Xiaojun Hu (Nanjing University of Posts and Telecommunications)</i></p>		<p>Improved in situ Measurement Methods for Radio Disturbance produced by Physically Large Equipment <i>Kimihiko TAJIMA, NTT Advanced Technology Corporation (NTT-AT), Japan</i></p>

TECHNICAL SESSIONS –FRIDAY, MAY 20, 2016

<i>Rooms</i>	<i>Narcissus A</i>	<i>Narcissus B</i>	<i>Open Forum</i>
10:40am – 12:20pm	Plenary Talk <i>Chair(s): En-Xiao Liu, A*STAR IHPC</i>		
10:40am	Metamaterial Technology for EMC Design <i>Tzong-Lin Wu</i> <i>National Taiwan University</i> This presentation will introduce advanced designs of metamaterial proposed by our group in the recent 10 years such as electromagnetic bandgap (EBG) structures, common-mode filters, frequency selective surface (FSS) and ferrite-free choke (FFC). The usage of these designs for SI, PI and EMC and basic design concepts will be briefly illustrated and validated with full-wave simulation and measurement. Besides metamaterial applied to EMC, wideband directional-coupler based on metamaterial and its applications of beam forming for smart antenna will also be demonstrated.		10:00am-12:00pm <i>The interactive sessions present the following technical topics in the poster session areas</i> EMC Standards and regulations EMC for mobile communication others <i>Student Paper Competition (poster session)</i>
11:30am	Challenges and Opportunities for EMI Design and Mitigation <i>Jun Fan and James L. Drewniak</i> <i>Missouri University of Science and Technology</i> This presentation will highlight several trends in EMI research with examples in the fields of above 10 GHz emissions, intra-system EMI, radio-frequency interference, noise source identification and modeling, mitigation techniques with new materials, tools, and design methodologies.		Exhibition is open today from 9:00am to 5:00pm.



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INTERACTIVE FORUM SESSIONS – FRIDAY, MAY 20, 2016

<i>May 20, 2016, Friday 10:00am-12:00pm</i>	<i>Venue: Orchid Hall</i>
FR-AM-I-FORUM SESSION-V: <i>Chair(s): Xinghai Zhang, Huawei Technologies</i>	FR-AM-I-FORUM SESSION-V: <i>Chair(s): Xing Chang Wei, Zhejiang University</i>
FR-AM-I-FOR-01 Overview of domestic and foreign standards for electromagnetic radiation(#1570265609) <i>Peipei Yuan, Wei Wang, Zheng Qi (China Information Technology Designing & Consulting Institute Co., Ltd)</i>	FR-AM-I-FOR-02 Test for Electromagnetic Environment of Mobile Communication Base Station (#1570265605) <i>Hai-Peng Zhang (Huaxia), Zheng Qi (China Information Technology Designing & Consulting Institute Co., Ltd)</i>
FR-AM-I-FOR-FOR-03 Overview of the thermal effect of electromagnetic radiation and the similarities and differences in the limits of domestic and foreign standards (#1570265610) <i>Zheng Qi, Wei Wang, Peipei Yuan (China Information Technology Designing & Consulting Institute Co., Ltd)</i>	FR-AM-I-FOR-04 An EMI Receiver Model with Consideration of the Intermediate Frequency Filter (#1570238277) BEST SYMPAPER FINALIST★ <i>Chenggang Li(Electric Power Research Institute of State GridJilin Electric Power CO,),Li Zhang (Changchun Power Supply Automobile Service Corporation of State Grid Jilin Electric Power CO., LTD.),and Tian Dong (Electric Power Research Institute of State GridJilin Electric Power CO, P.R. China); Tao Wang and Henglin Chen (Zhejiang University)</i>
FR-AM-I-FOR-FOR-05 Harmonic Component Extraction Algorithm of Conducted Emission Spectrum based on EMD and Periodic Extensional Model (#1570240099) <i>Dawei Song, Donglin Su, Xiaofan Shang and Yao Chen (Beihang University)</i>	FR-AM-I-FOR-FOR-06 A Mixing-fluency MNPs Detector Design and Simulation by Based on the Nonlinear Magnetization (#1570247450) <i>Xiaodong Zhang, Qiuchen Wu and Yang Yu and Ming Wang (University of Chinese Academy of Sciences)</i>
FR-AM-I-FOR-FOR-07 Research on the Scheme for Controlling Constant Power of Magnetically-coupled Resonant wireless power transfer Transfer System (#1570238940) <i>Lianhe Li, Xin Zhang, Xian Zhang and Hang Su (Tianjin Ploytechnic University); Yajuan Huang (Foxconn Technology Group)</i>	FR-AM-I-FOR-FOR-08 Analysis of Global Major Standards and Regulations for Electromagnetic Radiation(#1570265602) <i>Xinghai Zhang , ZhangWeimin, Chen Hao(Huawei Technologies Co., Ltd,)</i>
FR-AM-I-FOR-FOR-09 An Algebraic Method Monitoring the Integrity of Complex Systems (#1570239362) <i>Semin V.G. (Russian State Social University, Russia); Dianov V.N. (Moscow State University of Mechanical Engineering, Russia); Mikheev V.A. (Join Stock Company "ScientificResearch Institute of digital electronic computers", Russia)</i>	FR-AM-I-FOR-FOR-10 A Novel Wideband Balun With a CPW Power Divider (#1570239935) <i>Zhichao Yang, Shanshan Lin, Feng Bai, Mingmin Zhao and Peng Zhao (China Electric Power Research Institute); Wenfeng Wang (HUAWEI Communication Technology Co., Ltd, Shenzhen)</i>
FR-AM-I-FOR-FOR-10 Mathematical Model of the Transitive Zone of Weak-Current Electrical Contacts in the Conditions of A Dust Content (#1570235943) <i>Lyuminarskaja E. S. (Bauman Moscow State Technical University, Russia); Dianov V.N. (MAMI, Russia)</i>	FR-AM-I-FOR-FOR-12 Signal Transmission along Cu-Graphene Heterogeneous Interconnects (#1570244113) <i>Yili Xu, Yongsheng Li, Da Yi, Xingchang Wei and Erping Li (Zhejiang University)</i>

STUDENT PAPER COMPETITION SESSIONS – FRIDAY, MAY 20, 2016

May 20, 2016, Friday 10:00am-12:00pm		Venue: Orchid Hall	
Chair(s): Wen-Yan Yin (Zhejiang University)			
<p>WE-PM-I-TC14-3 Development of Meltbrown Non-Woven Fabric Type Non-Magnetic Noise Suppressor (#1570239937) BEST STUDENT PAPER FINALIST★★ <i>Jiang Fu, Masahiro Yamaguchi (Tohoku University), Sho Muroga (National Institute of Technology Toyota College), Tomoya Tanaka, Chie Okamura, Lumina Obi and Kazufumi Kato (Asahikasei Fibers Corporation,)</i></p>	<p>WE-PM-II-SS13-5 Measurement and Modeling of System-level ESD Noise Voltages in Real Mobile Products (#1570239911) BEST STUDENT PAPER FINALIST★★ <i>Myungjoon Park, Junsik Park (UNIST, Korea), Manho Seung, Joungcheul Choi, Changyeol Lee and Seokkiu Lee (SK Hynix Inc., Korea), Jingoek Kim (UNIST, Korea)</i></p>		
<p>TH-PM-II-FOR-ICEM-07 An Improved Model of LDMOS Power Amplifier for Effectively Suppressing Metallic Shielding Cover Effects (#1570239553) BEST STUDENT PAPER FINALIST★★ <i>Liang Lin, Liang Zhou, Wenyan Yin and Junfa Mao (Shanghai Jiaotong University,); Yi Zhu (Ampleon Semiconductors (Shanghai) Co., Ltd,);</i></p>	<p>TH-PM-I-FOR-SYS-08 Steady-state Analysis of the Adaptive Interference Cancellation System Using Automatic Gain Control Technique (#1570239594) BEST STUDENT PAPER FINALIST★★ <i>Jian Tang, Zhihua Zhao, Yi Li, Jin Meng, Fangmin He, Wei Li and Wenlu Li (Naval University of Engineering)</i></p>		
<p>FR-AM-I-TC11-3 The Equivalent Circuit Model for Electrostatic and Magnetostatic Biased Tunable Graphene As the Absorption Material (#1570239640) BEST STUDENT PAPER FINALIST★★ <i>Ying S. Cao and Lijun Jiang (University of Hong Kong, Hong Kong), Albert Ruehli (Missouri University of S & T)</i></p>	<p>FR-AM-I-TC11-1 Improved Hybrid Leapfrog ADI-FDTD Method for Simulating Complex Electromagnetic Environment Effects (E3) on a Warship with Multi-Wire Antennas (#1570248145) BEST STUDENT PAPER FINALIST★★ <i>Zhuo-xian Liang, Hao Xie and Yang Guo (Zhejiang University), Jian Wang (University of Ningbo), Er-Ping Li and Wenyan Yin (Zhejiang University)</i></p>		
<p>FR-PM-I-FOR-COM-06 A Single-Layer Dual-Band Miniaturized Frequency Selective Surface with Compact Structure (#1570237234) BEST STUDENT PAPER FINALIST★★ <i>Tao Zhong, Hou Zhang, Rui Wu and Xueliang Min (Air Force Engineering University))</i></p>	<p>FR-PM-I-TS03-3 Magnetic Near Field from an Inductive Power Transfer System Using an Array of Coupled Resonators (#1570240290) BEST STUDENT PAPER FINALIST★★ <i>José Alberto, Ugo Reggiani and Leonardo Sandrolini (University of Bologna)</i></p>		
<p>SA-AM-I-FOR-TC02-2 Study of the choice of the origin in spherical harmonics expansion for magnetic near-field sources (#1570239038) BEST STUDENT PAPER FINALIST★★ <i>Zhao Li and Francois Tavernier (Université de Lyon, France), Arnaud Breard (Ecole Centrale Lyon, France), Laurent Krähenbühl (Ecole Centrale de Lyon & CNRS, France), Damien Voyer (INSA Lyon, Lebanon)</i></p>	<p>FR-PM-II-FOR-WPT-08 Multi-Scale Modeling Method of Wireless Power Transfer Systems (#1570239965) BEST STUDENT PAPER FINALIST★★ <i>Chensen Tang and Hao Shen (Chongqing University)</i></p>		
<p>SA-AM-I-FOR-TC04-1 Electromagnetic Field Coupling to Transmission Lines: A Model for the Risers (#1570237650) BEST STUDENT PAPER FINALIST★★ <i>Gaspard Lugrin, Nicolas Mora and Farhad Rachidi (EPFL, Switzerland), Sergey Tkachenko (Otto-von-Guericke-University)</i></p>	<p>SA-AM-I-FOR-TS01-3 Characterization of EMI-Reducing Spread-Spectrum Techniques for Class-D Audio Amplifiers (#1570240093) BEST STUDENT PAPER FINALIST★★ <i>Timucin Karaca and Mario Auer (Graz University of Technology, Austria)</i></p>		
<p>SA-PM-II-TC15-1 OAM Radio Waves Generation Using Dielectric Resonator Antenna Array (#1570239878) BEST STUDENT PAPER FINALIST★★ <i>Muhammad Rizwan Akram, Liangqi Gui and Dandan Liu (Huazhong University of Science and Technology)</i></p>	<p>SA-PM-I-TS03-2 Comparison of Two Bidirectional Wireless Power Transfer Control Methods (#1570235296) BEST STUDENT PAPER FINALIST★★ <i>Yiming Zhang, Fanbo He, Fang Liu, Kainan Chen, Zhengming Zhao and Liqiang Yuan (Tsinghua University)</i></p>		
<p>TH-PM-II-TC10-3 Analysis on Via Design for Impedance Mismatch Minimization in High Speed Channel (#1570240056) BEST STUDENT PAPER FINALIST★★ <i>Jaemin Lim, Heegon Kim, Dong-Hyun Kim and Yeseul Jeon (KAIST, Korea), Koh Wee Jin and Weng Yew Chang (DSO National Laboratories, Singapore), Joungho Kim (KAIST, Korea)</i></p>	<p>SA-PM-II-TS04-3 Functional Brain Network Analysis during Auditory Oddball Task (#1570251602) BEST STUDENT PAPER FINALIST★★ <i>Miaomiao Guo, Guizhi Xu, Lei Wang and Lingdi Fu (Hebei University of Technology)</i></p>		

TECHNICAL SESSIONS –FRIDAY, MAY 20, 2016

Rooms	Rose 1	Rose 2	Rose 3
01:30pm – 03:30pm	TC05 System Level EMC and Protection (A) <i>Chair(s):</i> <i>Andy Marvin, University of York</i> <i>Donglin Su, Beihang University</i>	SS12 ESD and Transients <i>Chair(s):</i> <i>Ken Kawamata, Tohoku Gakuin University</i> <i>Takayoshi Ohtsu, Numazu College of Technology</i>	WS06 New Trends in EMC Test, Measurement and Calibration <i>Chair(s):</i> <i>Janet O'Neil and Zhong Chen, ETS-Lindgren</i>
01:30pm	FR-PM-I-TC05-1 Enclosure Shielding Assessment Using Surrogate Contents Fabricated From Radio Absorbing Material (Invited) (#1570243224) <i>Andy Marvin, Ian Flintoft, John Dawson, Martin Robinson, Simon Bale and Sarah Parker (University of York, UK), Ming Ye (Huawei Technologies AB, Sweden), Changyong Wan and Mengze Zhang (Huawei Technologies)</i>	FR-PM-I-SS12-1 Study on discharge characteristics of the ESD protection material and the effect of protection element (#1570239443) <i>Takayoshi Ohtsu (National Institute of Technology, Numazu College, Japan), Kouichi Sagisaka (Yuka Denshi, Japan)</i>	FR-PM-I-WS06-1 Antenna Calibration and Site Validation for Radiated Emissions Above 1GHz (CISPR 16-1-4, 16-1-5, 16-1-6) <i>Martin Wiles, ETS-Lindgren, Stevenage, UK</i>
01:50pm	FR-PM-I-TC05-2 A Review of the Challenges for System-Level Electromagnetic Compatibility Quantification Design (Invited) (#1570240122) <i>Donglin Su, Yao Chen and Haichao Qin (Beihang University)</i>	FR-PM-I-SS12-2 Influence of Approach Speed and Surface roughness of Electrode in Impulsive ESD Electromagnetic noise (#1570238262) <i>Kenichiro Abe, Ken Kawamata and Shigeki Minegishi (Tohoku Gakuin University, Japan), Osamu Fujiwara (Nagoya Institute of Technology, Japan)</i>	FR-PM-I-WS06-2 Understanding the Importance of EMI Compliance Receiver Calibration Measurements <i>Mark Terrien, Keysight Technologies, USA</i>
02:10am	FR-PM-I-TC05-3 Emission Source Microscopy Methodology for EMI Product Application (#1570240737) <i>Ling Zhang (Missouri University of S&T); Xiangyang Jiao, Xiao Li, Sukhjinder Toor and Alpesh Bhobe (CISCO, USA), Victor Khilkevich, David Pommerenke and James Drewniak (Missouri University of S&T, USA)</i>	FR-PM-I-SS12-3 A Study on Long Duration Electrical Stress Induced by Electrostatic Discharge on Wearable Devices (#1570239531) <i>Takahiro Yoshida (Tokyo University of Science, Japan)</i>	FR-PM-I-WS06-3 Using Time Domain Techniques for Fast and Efficient Site VSWR Measurements (Draft ANSI C63.25) <i>Zhong Chen, ETS-Lindgren, USA</i>
02:30pm	FR-PM-I-TC05-4 Dynamic Behavior Model for SEED Analysis; Extraction using Surface Response Modelling (#1570235237) <i>Mart Coenen (EMCMCC, The Netherlands), Ming Ye, Huichun Yu and Enshion Li (Bin) (Huawei Technologies)</i>	FR-PM-I-SS12-4 Modeling Electromagnetic Immunity of LDO under ESD Electromagnetic Field Coupling (#1570238929) <i>Shouguo Zhao, Changlin Zhou, Zhenhe Liang, Zhisheng Qian and Zhenyi Wang (Zhenzhou Institute of Information Science and Technology)</i>	FR-PM-I-WS06-4 Calibration of Field Probes for EMC Measurements <i>Thomas Kleine-Ostmann, Physikalisch-Technische Bundesanstalt, Braunschweig, Germany</i>
02:50pm	FR-PM-I-TC05-5 Modified Kron's Method (MKME) for EMC optimization, applied to an EMC filter (#1570240081) <i>Marine Stojanovic, Frederic Lafon and Priscila Fernandez-Lopez (VALEO, France), Sjoerd Op't Land and Richard Perdriau (ESEO, France)</i>	FR-PM-I-SS12-5 Part Factors Effect in Non-contacted Electrostatic Discharge (#1570240943) <i>Fangming Ruan, Wenjun Xiao (Guizhou Normal University), David Pommerenke (Missouri University of S&T), Qijun Zhi, Xiaolu Wang (Guizhou Normal University, China); Guangcan Li (Guizhou Astronautic Institute of Metrology & Test); Yonbing Xu (York University); Chao Zhang (Guizhou Normal University);</i>	FR-PM-I-WS06-5 Required Antennas (Including Hybrids) Used in ANSI C63.4-2014 for FCC Compliance Testing <i>Don Heirman, Don HEIRMAN Consultants, USA</i>
03:10pm	FR-PM-I-TC05-6 Evaluation of Isolation between Blade Antennas in Pre-design Phase using a Synthesized Model (#1570240149) <i>Qi Wu (Beihang University), Heinz-D. Brüns and Christian Schuster (Technischen Universität Hamburg-Harburg, Germany)</i>	FR-PM-I-SS12-6 Properties Analysis of Part Factors Effect in Non-contacted Electrostatic Discharge (#1570238534) <i>Fangming Ruan, Qijun Zhi (Guizhou Normal University), David Pommerenke, Wenjun Xiao, Xiaolu Wang, Guangcan Li, Yonbing Xu, Chao Zhang</i>	FR-PM-I-WS06-6 Bore sight and non bore sight Comparison test from 1~6 GHz <i>Tang Yung-Chi, Bureau of Standards, Metrology and Inspection (BSMI), Taiwan</i>

TECHNICAL SESSIONS –FRIDAY, MAY 20, 2016

Rooms	Narcissus A	Narcissus B	Open Forum
01:30pm – 03:30pm	TC10 SI and PI (C) <i>Chair(s): Ram Achar, Carleton University</i> Mu Shui Zhang, Sun Yat-Sen University	TS03 Topical Symposium on Wireless Power transfer Technologies <i>Chair(s): Seungyoung AHN, KAIST</i> Sun Yue, Chongqing University	Interactive Forum Sessions
01:30pm	FR-PM-I-TC10-1 Transient Simulation for Power Integrity using Physics based Circuit modeling (invited) (#1570250504) <i>B. Zhao, C. Huang, K. Shringarpure, S. Bai, T. Makharashvili (Missouri S&T); Y. S. Cao (Hongkong University), B. Achkir (Cisco Systems Inc.); M. Cracraft, M. Cocchini, S. Connor, B. Archambeault (IBM Corporation); L. Jiang (Hongkong University), A. Ruehli, J. Fan, J. Drewniak (Missouri S&T)</i>	FR-PM-I-TS03-1 Power transfer efficiency analysis of U-WPT system (#1570240180) BEST SYMPOSIUM PAPER FINALIST★ <i>Yue Sun and Zhaohong Ye (Chongqing University)</i>	01:00-3:30pm <i>The interactive sessions present the following technical topics in the poster session areas</i> Measurement and Testing Techniques Communication EMC Nanotechnology for EMC Lightning
01:50pm	FR-PM-I-TC10-2 Small Signal AC Analysis of Controller Circuits with Distributed PCB Effects (Invited) (#1570261401) <i>Ihsan Erdin (Global Design Engineering Celestica Inc), and Ram Achar (Carleton University, Canada)</i>	FR-PM-I-TS03-2 Analysis of Shifting in Self-Resonance Frequency of Flexible Coil for Wireless Power Transfer (#1570239647) <i>Seungtaek Jeong, Jinwook Song, Hongseok Kim, Chiuk Song, Sukjin Kim, Seongsoo Lee, Joungho Kim (KAIST)</i>	Exhibition is open today from 9:00am to 5:00pm.
02:10am	FR-PM-I-TC10-3 Manufacturing Parameters Optimization for 28Gb/s SerDes Package and Board Co-Design (Invited) (#1570246360) <i>Robert Wenzel and Tingdong Zhou (NXP Semiconductor)</i>	FR-PM-I-TS03-3 Magnetic Near Field from an Inductive Power Transfer System Using an Array of Coupled Resonators (#1570240290) BEST STUDENT PAPER FINALIST★★ <i>José Alberto, Ugo Reggiani and Leonardo Sandrolini (University of Bologna)</i>	
02:30pm	FR-PM-I-TC10-4 Pin Assignment Optimization for Large-Scale High-Pin-Count BGA Packages Using Particle Swarm Optimization Algorithm (#1570238470) <i>Qian-Hua Jian, Mu-Shui Zhang, Zhuo-Yue Li and Hong-Zhou Tan (Sun Yat-Sen University)</i>	FR-PM-I-TS03-4 Comparative Analysis of Dynamic Charging Tracks for Roadway-Powered Electric Vehicles (#1570238719) <i>Zhen Zhang and Bingnan Jia (Tianjin University)</i>	
02:50pm	FR-PM-I-TC10-5 Extraction of High Frequency Coupling between Cascaded TSV and RDL Interconnects((#1570245021) Yong-Sheng Li, Yi-Li Xu, Xing-Chang Wei and Er-Ping Li (Zhejiang University)	FR-PM-I-TS03-5 Analysis and Design of Magnetic Coupling Structure in Wireless Power Transmission System (#1570239958) <i>Fengchun Ye, Qingbin Chen and Wei Chen (Fuzhou University)</i>	

INTERACTIVE FORUM SESSIONS – FRIDAY, MAY 20, 2016

<i>20 May 2016, Friday 01:00-3:30pm</i>	<i>Venue: Orchid Hall</i>
FR-PM-I-FORUM SESSION-III: Measurement and Testing <i>Chair(s): Frank Leferink, University of Twente</i>	FR-PM-I-FORUM SESSION-III: Communication EMC <i>Chair(s): Jin Meng, Naval University of Engineering</i>
FR-PM-I-FOR-MES01 Validation of a Fully Anechoic Chamber (#1570240192) <i>Dwi Mandaris, Niek Moonen, Gerrit Stefan van de Beek, Frits Buesink and Frank Leferink (University of Twente, The Netherlands)</i>	FR-PM-I-FOR-COM-01 Interference Cancellation System Instantaneous Bandwidth and Time Delay Research (#1570239523) <i>Wei Li, Jin Meng, Jian Tang, Fangming He and Yi Li (Naval University of Engineering)</i>
FR-PM-I-FOR-MES02 Improvement of the Mutual Coupling Effect Between Biconical Antenna and Antenna Mast (#1570239901) <i>Jungchun Tsai (Electronics Testing Center, Taiwan); Donglin Meng (National Institute of Metrology); Yongchi Tang (Bureau of Standards, Metrology and Inspection, Taiwan); Kaiping Huang (Electronics Testing Center, Taiwan); Liangyang Lin (Bureau of Standards, Metrology and Inspection.)</i>	FR-PM-I-FOR-COM-02 Noise Analysis of Ultra-broadband Microwave Frequency Down-conversion based on OFC (#1570240137) <i>Shuyang Liu, Xiao Fang, Xiuzhu Ye, Ya Liu, Zheng Zheng and Ming Bai(Beihang University)</i>
FR-PM-I-FOR-MES03 Probabilistic-Statistical Model Based on Mode Expansion of the EM Field of Reverberation Chamber and its Monte Carlo Simulation (#1570240078) <i>Yu Li, Xiang Zhao, Liping Yan and Kama Huang (Sichuan University,); Haijing Zhou (Institute of Applied Physics and Computation Mathematics)</i>	FR-PM-I-FOR-COM-03 A Novel Miniaturized Metamaterial Absorber Based on the Modified Minkowski fractal structure (#1570239851) <i>Dingwang Yu, Peiguo Liu and Yanfei Dong (State Key Laboratory of Complex Electromagnetic Environmental Effects on Electronics)</i>
FR-PM-I-FOR-MES04 9 kHz - 30 MHz E-Field Measurement by an Innovative ROD Antenna embedding a Fully CISPR 16-1-1 Receiver (#1570240087) <i>Michele Zingarelli and Roberto Grego (NARDA Safety Test Solutions, Italy)</i>	FR-PM-I-FOR-COM-04 Review of Electromagnetic Interference Filters (#1570240076) <i>Junpeng Ji, Xingxia Zhang and Jingang Li (Xi'an University of Technology)</i>
FR-PM-I-FOR-MES05 A Method of PSF Estimation for Wideband Electromagnetic Distribution (#1570238732) <i>Boyu Dong and Shuguo Xie (Beihang University)</i>	FR-PM-I-FOR-COM-05 Shielding Effectiveness Analysis in A Two-Dimensional Magnetic Measurement System (#1570239910) <i>Xinliang Zhang, Youhua Wang, Long Chen, Hanyu Zhao and Miao Wang (Hebei University of Technology)</i>
FR-PM-I-FOR-MES06 Design of A Wideband Signal Detection Circuit for Electrical Field Sensor (#1570238736) <i>Tong Zhang and Shuguo Xie (Beihang University)</i>	FR-PM-I-FOR-COM-06 A Single-Layer Dual-Band Miniaturized Frequency Selective Surface with Compact Structure (#1570237234) BEST STUDENT PAPER FINALIST★ <i>Tao Zhong, Hou Zhang, Rui Wu and Xueliang Min (Air Force Engineering University)</i>
FR-PM-I-FOR-MES07 A Photoelectric Type Tunable Frequency Probe for Near-Field EMI Measurement (#1570243353) <i>Tao Song, MengJun Wang, Panpan Zuo and Jianying Liu (Hebei University of Technology)</i>	FR-PM-I-FOR-COM-07 Fabrication of Piezo-Impedance Based Pressure Distribution Sensor Using Conductive Fabric(#1570254181) <i>Tong In Oh, Hun Wi, You Jeong Jeong, Kap Jin Kim and Eung Je Woo (Kyung Hee University, Korea)</i>
FR-PM-I-FOR-MES08 High Flatness Log-scale Comb-generator Using FPGA-based Arbitrary Waveform Generator for sub-30 MHz Emission Test Systems (#1570240018) <i>Michitaka Ameya and Satoru Kurokawa (NMIJ, AIST, Japan)</i>	FR-PM-I-FOR-COM-08 Current Density Imaging of Brain Tissues during Transcranial Direct Current Stimulation (tDCS)(#1570254183) <i>Hun Wi, Saurab ZK Sajib, Woo Chul Jeong, Nitichi Katoch Hyung Joong Kim (Kyung Hee University, Korea); Oh In Kwon (Konkuk University, Korea); Eung Je Woo (Kyung Hee University)</i>
FR-PM-I-FOR-MES09 Influence of Dielectric Support on Military Radiated Emission Tests Above 30 MHz (#1570239993) <i>Osman Sen, Soydan Cakir, Murat Celep, Mehmet Cinar, Ramiz Hamid and Mustafa Cetintas (TUBITAK UME, Turkey)</i>	FR-PM-I-FOR-COM-09 Implementation of Hodgkin-Huxley Neuron Model In FPGAs(#1570254233) <i>Mai Lu, Jinlong Wang, Jia Wen and Xuwei Dong (Lanzhou Jiaotong University)</i>
TH-PM-II-FOR-ICEM-09 Simulation of EMI at Design Level for Integrated Circuits (#1570239195) <i>Vivek Sangwan, Dipesh Kapoor and Cher Ming Tan (Chang Gung Universit)</i>	FR-PM-I-FOR-COM-10 A Hardware Implementation Method of the Aihara Chaotic Neural Network(#1570254323) <i>Guizhi Xu, Zhao Yang and Jie Luo (Hebei University of Technology)</i>

INTERACTIVE FORUM SESSIONS – FRIDAY, MAY 20, 2016

<i>May 20, 2016, Friday 01:00-3:30pm</i>		<i>Venue: Orchid Hall</i>	
FR-PM-I-FORUM SESSION-III: Nanotechnology for EMC <i>Chair(s): Ran Hao, Zhejiang University</i>		FR-PM-I-FORUM SESSION-III: Lightning <i>Chair(s): Vignesh Rajamani, Oklahoma State University</i>	
FR-PM-I-FOR-NANO-01 Design of Fermat-Archimedes Spiral Dual-Via EBG Structure for Low Mutual Coupling Antenna Array (#1570239686) <i>Yan Zhang, Ting Yu, Lingyu Kong, Rongling Lang and Honglei Qin (Beihang University)</i>	FR-PM-I-LIGH-01 Evaluation Method of Lightning Performance on Low Voltage System in Smart Substation (#1570240405) <i>Shanqiang Gu (State Grid Electric Research Institute, P.R. China); Yaqi Yang (North China Electric Power University); Wanxing Feng, Di Li, Jie Su, Xiangxue Zeng and Yichuan He (State Grid Electric Research Institute)</i>		
FR-PM-I-FOR-NANO-02 Anti-Multipath Dual-Band GNSS Antenna Design with Peano Fractal EBG Structure (#1570239719) <i>Yan Zhang, Xiaomeng Yu, Lingyu Kong, Lupeng Zhang and Honglei Qin (Beihang University)</i>	FR-PM-I-LIGH-02 Reconstructing Initial Continuous Current Waveform in Rocket-Triggered Lightning with Close Magnetic Measurement (#1570232776) <i>Gaopeng Lu, Yanfeng Fan, Hongbo Zhang, Rubin Jiang, Mingyuan Liu and Xiushu Qie (Chinese Academy of Sciences, Institute of Atmospheric Physics); Steven A. Cummer (Duke University, USA)</i>		
FR-PM-I-FOR-NANO-03 Acoustic Source Reconstruction in Magnetoacoustic Imaging (#1570245827) <i>Hongshuang Yang, Shuai Zhang, Xueying Zhang and Guizhi Xu (Hebei University of Technology)</i>	FR-PM-I-LIGH-04 A Numerical Study of Hail Process Effects on Charge Structure and Lightning Flash Rate of Thunderstorms (#1570239887) <i>Wei qi Gao, Zheng Kou and Pengfei Ding (PLA University of Science and Technology)</i>		
FR-PM-I-FOR-NANO-04 Fano Resonance in High Permittivity Cylinder (#1570233202) <i>Xianghong Kong and Gaobiao Xiao (Shanghai Jiao Tong University);</i>	FR-PM-I-LIGH-05 Research on the Distribution of Magnetic Field around Communication Tower When Struck by Lightning (#1570234673) <i>Kun Liu, Junfeng Guo and Huilian She (Chengdu University of Information and Technology)</i>		
FR-PM-I-FOR-NANO-05 Design of Reconfigurable Multi-Finger EBG Structure (#1570239743) <i>Liwei Wang, Yan Zhang, Linyu Kong, Ning Fang and Haoqian Song (Beihang University)</i>	FR-PM-I-LIGH-06 Time Domain Full Wave PEEC Circuit Model for Buildings Lightning Protection System (#1570238000) <i>Xin Liu, Pengfei Wang and Guishu Liang (North China Electric Power University)</i>		
FR-PM-I-FOR-NANO-06 Applications of graphene in terahertz electromagnetic band-gap structure designs (#1570237150) <i>Yanfei Dong and Peiguo Liu (National University of Defense Technology)</i>	FR-PM-I-LIGH-07 Application of the Coaxial Unification Fractal Model on the Striking Distance to Earth Surface (#1570237267) <i>Nan Wang (Beijing Institute of Tracking and Telecommunications Technology)</i>		
FR-PM-I-FOR-NANO-07 Electrical Modeling of On-Chip Copper-Carbon Nanotube Composite Interconnects (#1570238225) <i>Xuan Gao, Jie Zheng, Wensheng Zhao and Gaofeng Wang (Hangzhou Dianzi University)</i>	FR-PM-I-LIGH-08 Estimation of Critical Electric Field Intensity of Soil Ionization Base on the Ohm's Law (#1570234898) <i>Kun Liu, Chuan Wang and Huilian She (Chengdu University of Information and Technology)</i>		
FR-PM-I-LIGH-03 Lightning Influence upon Dielectric Fiber Cables (#1570253617) Stanislav A. Sokolov (Moscow Technical University of Communications and Informatics, Russia)			

TECHNICAL SESSIONS –FRIDAY, MAY 20, 2016

Rooms	Rose 1	Rose 2	Rose 3
03:50pm – 05:50pm	SS15 Recent advances in PCB design and characterization for high speed interconnect <i>Chair(s): Xiaoning Ye, Intel Jimmy Hsu, Intel Corporation</i>	WS07 EMC Simulation of Consumer Electronic Devices <i>Organizer(s): Marko Walter, CST AG</i>	TC02 EMC Measurement and EM Environment <i>Chair(s): Kouji Shibata, Hachinohe Institute of Technology Richard Gao, A*STAR IHPC</i>
03:50pm	FR-PM-II-SS15-1 Analysis of Transmission-Line Based Dk Df Extraction Method (#1570239842) <i>Shuai Jin and Xiang Fang (Missouri University of Science and Technology), Xiaoning Ye (Intel, USA), Jun Fan (Missouri University of Science and Technology)</i>	FR-PM-II-WS07-1 Detecting EMC Issues on Printed Circuit Boards, by Means of a Rule Checking <i>Marko Walter, CST AG Germany</i>	FR-PM-II-TC02-1 Test Method for Coupling Attenuation of Screened Twisted Pair Cable Based on Mixed-mode S-Parameters (#1570240404) <i>Bingbing Li and Zhongyuan Zhou (Southeast University)</i>
04:10pm	FR-PM-II-SS15-2 Characterization of PCB s-parameters with a New Calibration Method (#1570238353) <i>Cheng Ning and Mike Resso (Keysight Technologies, USA), Zhu Wenxue, Jia Gongxian and Long Faming (Huawei Tchenologies)</i>		FR-PM-II-TC02-2 Use of RMS-Average Detector for emission measurements on multimedia equipment in accordance with CISPR 32 (#1570237340) <i>Jens Medler (Rohde & Schwarz GmbH & Co. KG & Test and Measurement Division)</i>
04:30pm	FR-PM-II-SS15-3 System Operating Environment Effect On PCB Material Electrical Property (#1570238809) <i>Jim Lai and Tristan Lin (ITEQ)</i>		FR-PM-II-TC02-3 Modeling and Mitigation on Conducted Emission for Switch Mode Power Supply (#1570236011) <i>Xin Qian, Wei Yan, Pingdong Sun and Enrong Wang (Nanjing Normal University,)</i>
04:50pm	FR-PM-II-SS15-4 Microstrip Lines Far-End Crosstalk Cancellation Using Striplines in Hybrid PCB Structure (#1570239860) <i>Ming-Hsien Cheng, Yun-Ju Tung, Daniel Ying-Tso Lai and Chia-Nan Pai (Foxconn,)</i>	FR-PM-II-WS07-2 3D Simulations of Components and Enclosures <i>Chiang Chun Tong, CST South East Asia</i>	FR-PM-II-TC02-4 Analysis of EM Interference Between BeiDou and GPS Based on The Behavior Model of RF Front-End (#1570217969) <i>Zhonghao Lu and Li-an Bian (National University of Defense Technology)</i>
05:10pm	FR-PM-II-SS15-5 New Surface Treatment Method for Copper Foils to Improve Signal Integrity of Printed Circuit Board (#1570239876) <i>Chia-Ling Chen, Fu-Je Chen, Meng-Hsien Chen, Ming-Kai Teng, James Chen and Shi-Ching Lin (Nan Ya Plastics Corporation)</i>		FR-PM-II-TC02-5 Study on Electromagnetic Influence of 750kV AC Transmission Lines on Multiple Buried Pipelines (#1570233773) <i>Haifeng Sun and Pei Wang (North China Electric Power University), Haojing Chang, Xiancang Ai, Tianlong E, Bonian Su, Rongrong Zhu, Zhihong Li and Chuangfeng Wang (State Grid Gansu Electric Power Company)</i>
05:30pm	FR-PM-II-SS15-6 SI Architecture Optimized High Speed Serial Design for PCB Cost Saving (#1570240075) <i>Yinglei Ren (Intel Asia-Pacific Research & Development Ltd., Shanghai), Kai Xiao (Intel Corporation), Nan Kang and Luming Zhang, Dan Liu (Intel Asia-Pacific R&D Ltd.), Yuan-Liang Li (Intel,)</i>		FR-PM-II-TC02-6 A Study on Measurement of Complex Permittivity in Certain Liquid Types via the Open-ended Cut-off Waveguide Reflection Method using an N Connector (#1570237827) <i>Kouji Shibata and Masaki Kobayashi (Hachinohe Institute of Technology)</i>

TECHNICAL SESSIONS –FRIDAY, MAY 20, 2016

Rooms	Narcissus A	Narcissus B	Open Forum
03:50pm – 05:50pm	<p>TS01 Topical Symposium on IC EMC (A) <i>Chair(s): B. Deutschmann, Graz University of Technology</i> <i>Osami Wada, Kyoto University</i></p>	<p>TU07 Paper Writing Skills for IEEE Transactions John Norgard, Associate Editor for IEEE Transactions on EMC Perry Wilson, Editor-in-Chief for IEEE Transactions on EMC (2005-2008), NIST</p>	<p>Interactive Forum Sessions</p>
03:50pm	<p>FR-PM-II-TS01-1 A methodologic project to characterize and model COTS Components EMC behavior after ageing (#1570239050) <i>Andre Durier (IRT Saint-Exupery, France), Alexandre Boyer (INSA Toulouse, France), Genevieve Duchamp (IMS, France)</i></p>	<p>FR-PM-II-TU07-1 Publishing a good paper for IEEE Transactions <i>John Norgard, Associate Editor for IEEE Transactions on EMC, USA</i></p> <p><i>Writing a good technical paper for both Professors and Postgraduate Students is essential, the two very experienced Speakers being Editor-in-Chief and Associate Editor for IEEE Transactions on EMC will share the experience and key skills on how to write an excellent IEEE Transaction paper.</i></p>	<p>3:30-5:30pm <i>The interactive sessions present the following technical topics in the poster session areas</i> Antenna and Propagation Wireless Power Technology</p>
04:10pm	<p>FR-PM-II-TS01-2 Design of a Multi-Frequency Clocking Circuit on an FPGA and Analysis of Its EMI Emission (#1570239890) <i>Van Nguyen Toan, Minh Dam Tung and Jeong-Gun Lee (Hallym University, Korea)</i></p>		
04:30pm	<p>FR-PM-II-TS01-3 FastImmunity: An EDA extension for PCB immunity prediction (#1570238033) <i>Ala Ayed, Sjoerd Op't Land, Richard Perdriau and Mohamed Ramdani (ESEO Group)</i></p>	<p>FR-PM-II-TU07-2 Writing a Good Paper for IEEE Transactions: My Perspective <i>Perry Wilson, Editor-in-Chief for IEEE Transactions on EMC (2005-2008) NIST, USA</i></p> <p><i>Cover aspects of writing a good paper for submission to the IEEE Transactions, Covered will be goals, hints, and dos and don'ts for the abstract, index terms, main text, and conclusions of a paper. The material is based on his experience as both a reviewer and a former Editor-in-Chief of the Transaction</i></p>	<p>Exhibition is open today from 9:00am to 5:00pm.</p>
04:50pm	<p>FR-PM-II-TS01-4 Evaluate Component EMC performance from Device EMC testreport (#1570239665) <i>Linx Yang (Infineon)</i></p>		
05:10pm	<p>FR-PM-II-TS01-5 Characterization of Change in Microcontroller Susceptibility During Accelerated Aging (#1570237821) <i>Chuangwei Li and Jianfei Wu (National University of Defense Technology), Yan Huang (NUDT), Wei Zhu (Xiangtan University)</i></p>		
05:30pm			

INTERACTIVE FORUM SESSIONS – FRIDAY, MAY 20, 2016

<i>May 20, 2016, Friday 03:30-5:30pm</i>	<i>Venue: Orchid Hall</i>
FR-PM-II-FORUM SESSION-IV: Antenna and Propagation <i>Chair(s): Sungtek Kahng (University of Incheon) and Li ZhiPeng (State Key Laboratory of CEMEE)</i>	FR-PM-II-FORUM SESSION-IV: Wireless Power Technology <i>Chair(s): Yanzhao Xie (Xi'an Jiaotong University)</i>
FR-PM-II-FOR-AP-01 The Time-Domain E-field Probe Using RF-Over-Fiber and Power-Over-Fiber Technology with Enhanced Sensitivity (#1570238462) <i>Chengchia Lin (National Kaohsiung Normal University); Shaonan Hong and Sungmao Wu (National University of Kaohsiung.); Jianming Wu (National Kaohsiung Normal University);</i>	FR-PM-II-FOR-WPT-01 The Study Based On New Resonant topology of Wireless Power Transfer System (#1570237628) <i>Junchuan Liu, Jingqin Wang and Yanan Li (Hebei University of Technology); Yulong Cui (Beijing University of Chemical); Haoliang Fan and Huijun Liu (Hebei Changfu Electrical Equipment CO., LTD.)</i>
FR-PM-II-FOR-AP-02 Design of An Ultra-Wideband Sinuous Antenna Applied for Respiratory Monitor (#1570238505) <i>Xu Chen, Lina Fang and Xianfeng Wu (Shenzhen Institute of Information Technology); Chunjiu He (Shenzhen Graduate School of Peking University)</i>	FR-PM-II-FOR-WPT-02 A New Analog Adaptive Feed-forward Linear Power Amplifier (#1570239587) <i>Wei Li, Jin Meng, Chuanjie Gou, Jian Tang and Fangming He (Naval University of Engineering)</i>
FR-PM-II-FOR-AP-03 Study of Non-Reciprocity Based on Horizontal Inhomogeneous Surface Waveguide (#1570241353) <i>Kaikai Guo, Xiaoyan Du and Shenghua Ma (Zhengzhou Institute of Information Science and Technology, 24009)</i>	FR-PM-II-FOR-WPT-03 Parameters Calculation and Simulation of Magnetic Coupling Resonance Wireless Power Transfer System (#1570239877) <i>Yameng Wang, Jiancheng Song, Lingyan Lin and Xinghua Wu (Taiyuan University of Technology)</i>
FR-PM-II-FOR-AP-04 Varactor-Tuned Dual Band Filter-Antenna for Wireless Applications (#1570240098) <i>Yiping Zang, Sen Yang, Dan Feng, Chuanhan Zhan and Huiqing Zhai (Xidian University.)</i>	FR-PM-II-FOR-WPT-04 A Study of Electromagnetic Emission from Two-Coil WPT System Using Resonant Magnetic Field Coupling (#1570239603) <i>Heyuan Qi, Wenjie Chen, Yilin Sha, Yaqiang Han, Hongchang Li and Xu Yang (Xi'an Jiaotong University)</i>
FR-PM-II-FOR-AP-05 Optoelectronic E-field Probes with Amplifier for Interference Free Near Field Antenna Measurements (#1570239955) <i>Po-ChouPan, Shaonan Hong and Sungmao Wu (National University of Kaohsiung)</i>	FR-PM-II-FOR-WPT-05 Efficiency Optimization of On-Road Charging for Electrical Vehicles (#1570237343) <i>Linlin Tan, Jinpeng Guo, Han Liu and Xueliang Huang (Southeast University)</i>
FR-PM-II-FOR-AP-06 Low Profile Circular Patch-Ring Antennas for DSRC Applications (#1570239254) <i>Ling Huang, Ankang Liu and Yilong Lu (Nanyang Technological University)</i>	FR-PM-II-FOR-WPT-06 Analysis of the Multi-Layer Printed Spiral Coil for Wireless Power Transfer system Used in Medical Implants (#1570239567) <i>Feixiang Gong, Yanping Cong, Zhiqiang Wei, Bo Yin, Haokun Chi, Xiaolin Luan (Ocean University of China)</i>
	FR-PM-II-FOR-WPT-07 An CCL Topology Wireless Power Transfer System for Low Voltage Side Equipment on Power Lines (#1570239850) <i>Liyang Jin and Chunbo Zhu (Harbin Institute of Technology)</i>
	FR-PM-II-FOR-WPT-08 Multi-Scale Modeling Method of Wireless Power Transfer Systems (#1570239965) BEST STUDENT PAPER FINALIST★★ <i>Chensen Tang and Hao Shen (Chongqing University)</i>

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<i>May 20, 2016, Friday 03:30-5:30pm</i>		<i>Venue: Orchid Hall</i>	
FR-PM-II-FORUM SESSION-IV: Wireless Power Technology (cont'd) <i>Chair(s): Yanzhao Xie (Xi'an Jiaotong University)</i>	FR-PM-II-FORUM SESSION-IV: Antenna and Propagation (cont'd) <i>Chair(s): Sungtek Kahng (University of Incheon) and Li ZhiPeng (State Key Laboratory of CEMEE)</i>		
FR-PM-II-FOR-WPT-09 Electromagnetic Field Reduction in Railway Wireless Power Transfer System (#1570240010) <i>Jedok Kim (KAIST, Korea); Hyun-Ho Park (The University of Suwon, Korea); Seungyoung Ahn (KAIST, Korea)</i>	FR-PM-II-FOR-AP-08 Fractal Loop Antenna with Novel Impedance Matching for RF Energy Harvesting (#1570241649) <i>Miaowang Zeng (Sun Yat-Sen University, Guangzhou); Andrey S. Andrenko, Hongzhou Tan, Chong Lu and Xianluo Liu (SYSU-CMU Shunde International Joint Research Institute)</i>		
FR-PM-II-FOR-WPT-10 Analysis on EMI issues of Rezenec™ technology wireless power product (#1570240418) <i>Minglin Li and Paul Chen (BYD Co., Ltd.)</i>	FR-PM-II-FOR-AP-09 A U-shaped Slot Antenna for WLAN and WIMAX Applications (#1570237504) <i>Zimu Yang and Hou Zhang (Airforce Engineering University); Leiming Zhang and An Wang (Electronic Systems Engineering Corporation of China)</i>		
FR-PM-II-FOR-WPT-11 Hybrid Metamaterial Design for Magnetic Field Shielding in Wireless Power Transfer (#1570238756) <i>Seongsoo Lee, Yeonje Cho, Hongseok Kim, Chiuk Song, Seungtaek Jeong and Joungho Kim (Korea Advanced Institute of Science and Technology)</i>	FR-PM-II-FOR-AP-10 Tri-band Antenna with Slot Patterns on the edge (#1570239823) <i>Lu Wang and Hongxing Zheng (Tianjin University of Technology and Education)</i>		
FR-PM-II-FOR-WPT-12 Effects of Operation Frequency and Current on Coil Impedance of EV Wireless Charging System (#1570235554) <i>Yanjie Guo, Lifang Wang, Qingwei Zhu, Chenglin Liao and Liye Wang (Chinese Academy of Sciences)</i>	FR-PM-II-FOR-AP-11 A Kind of HEMP Simulator Based on Low-Frequency-Compensated TEM Horn Antenna (#1570240070) <i>Shaofei Wang, Yanzhao Xie and Yanpeng Ge (Xi'an Jiaotong University)</i>		
FR-PM-II-FOR-WPT-13 Wireless Charging to Multiple Electronic Devices Simultaneously in Enclosed Box (#1570236241) <i>Chen Chen and Xin Wang (Nanjing University of Aeronautics and Astronautics); Mingyu Lu (West Virginia University Institute of Technology)</i>	FR-PM-II-FOR-AP-12 Design of 60 GHz Microstrip Antenna Array Composed through Circular Contour Feeding Line (#1570244634) <i>Ge Zhang, Shi Pu and Xiaoying Xu (Wuhan University of Technology); Yuan Liu and Chen Wang (Altair Engineering Software (Shanghai) Co., Ltd.)</i>		
FR-PM-II-FOR-WPT-14 Study on the Brain Network Following Magnetic Stimulation of Hegu Point Based on Multi-Threshold Analysis (#1570245811) <i>Lingdi Fu, Guizhi Xu, Hongli Yu, Miaomiao Guo and Ning Yin (Hebei University of Technology)</i>	FR-PM-II-FOR-AP-13 Characteristic Mode Analysis of Near-Field Mutual Coupling Between Wire and Loop Antennas (#1570238542) <i>Peiyu Liang, Wei Su and Qi Wu (Beihang University)</i>		
FR-PM-II-FOR-WPT-15 Study of Specific Absorption Rate (SAR) Induced In Human Endocrine Glands For Using Mobile Phones (#1570250399) <i>Mai Lu (Lanzhou Jiaotong University); Xiaoyan Wu (The 1st Hospital of Lanzhou University)</i>	FR-PM-II-FOR-AP-14 A Vivaldi Antenna with Adjustable In-band Notched Characteristic (#1570239996) <i>Biao Zhang, Kedi Zhang, Sen Yang and Huiqing Zhai (Xidian University)</i>		
FR-PM-II-FOR-WPT-16 Measurement and Analysis System of Vibration for the Detection of Insect Acoustic Signals (#1570250911) <i>Wei Pan, Jingjing Xu, Xiangyang Kong and Weidong Pan (University of Chinese Academy of Sciences)</i>	FR-PM-II-FOR-AP-15 A Dual-band and Dual-polarized Fractal Antenna for WLAN Applications (#1570239982) <i>Lei Xi, Dong Yang, Dan Feng and Huiqing Zhai (Xidian University)</i>		

TECHNICAL SESSIONS – SATURDAY, MAY 21 2016

Rooms	Rose 1	Rose 2	Rose 3
8:40am – 10:20am	SS06 EM Information Leakage from Commercial Devices and Its Countermeasure <i>Chair(s): Zhang Xiuyin, South China University of Technology Yuichi Hayashi, Tohoku Gakuin University</i>	TC01EMC Management/Standards <i>Chair(s): Martin Wiles, ETS-Lindgren Meng Donglin, National Institute of Metrology</i>	TC02 EMC Measurement and EM Environment <i>Chair(s): Yilong Lu, Nanyang Technological University David Pommerenke, Missouri University of Science and Technology</i>
8:40am	SA-AM-I-SS06-1 Introduction to EM Information Leakage from Commercial Devices and Its Countermeasure (#1570239445) <i>Yuichi Hayashi (Tohoku Gakuin University, Japan), William A. Radasky (Metatech Corporation, USA)</i>	SA-AM-I-TC01-1 Evaluation of Present Limit for Radiated Emission Measurement in FAR Test Site and Proposal for New Limits according to the Polarization Plane (#1570234421) <i>Kunihiro Osabe (VCCI Council, Japan), Shinichi Okuyama (VCCI Council / NEC Platforms, Japan)</i>	SA-AM-I--TC02-1 Minimal Detectable Signal during Current Measurement in a CISPR 25 Set-Up (#1570240154) <i>Zongyi Chen, Jin Jia and Stephan Frei (TU Dortmund University, Germany), Syed Huq and David Pommerenke (Missouri University of Science and Technology)</i>
9:00am	SA-AM-I-SS06-2 An Information Recovery Technique From Radiated Electromagnetic Fields From Display Devices (#1570239593) <i>Ho seong Lee and Jong-Gwan Yook (Yonsei University, Korea), Kyohong Sim (LIG Nex1, Korea)</i>	SA-AM-I-TC01-2 An Alternative Method for Calibration of monopole and loop antenna in GTEM Cell (#1570240210) <i>Tae-Heon Jang (Korea Testing Laboratory (KTL), Korea), Jong-Hyuk Lim and Bo-Weon Lee (National Radio Research Agency (RRA), Korea)</i>	SA-AM-I-TC02-2 Peak Envelope Power Measurements for Mobile Communications: A Preliminary Study (#1570238986) <i>Yu Song Meng (National Metrology Centre, A*STAR, Singapore), Jiawen Luo and Yilong Lu (Nanyang Technological University, Singapore), Yueyan Shan (National Metrology Centre, A*STAR, Singapore), Yee Hui Lee (Nanyang Technological University, Singapore)</i>
9:20am	SA-AM-I-SS06-3 Measurement and Analysis of the Compromising Electromagnetic Emanations From USB Keyboard (#1570239690) <i>Dongju Sim, Ho seong Lee and Jong-Gwan Yook (Yonsei University, Korea), Kyuhong Sim (LIG Nex1)</i>	SA-AM-I-TC01-3 On Antenna Radiation Patterns for EMC measurements above 1 GHz (#1570240033) <i>Martin Wiles(ETS-Lindgren, United Kingdom), Alexander Kriz (Seibersdorf Laboratories, Austria)</i>	SA-AM-I-TC02-3 Time-domain Measurement Technique to Analyze Cyclic Short-Time Interference in Power Supply Networks (#1570238707) <i>Iwan Setiawan, Cees Keyser (University of Twente, The Netherlands), Marico Azpurua, Ferran Silva (Universitat Politècnica de Catalunya, Spain) and Frank Leferink (University of Twente)</i>
9:40am	SA-AM-I-SS06-4 Network transmission of hidden data using smartphones based on compromising emanations (#1570237852) <i>Degang Sun, Di Wei, Ning Zhang, Zhiqiang Lv and Xi Yin (Institute of Information Engineering, Chinese Academy of Sciences)</i>	SA-AM-I-TC01-4 Necessity of more detailed definition of electrical fast transient/burst and surge waveforms (#1570240993) <i>Lei Zhou, Pinzhang Zhao and Linxiang Deng (Jiangsu Institute of Metrology), Wei Yan (Nanjing Normal University)</i>	SA-AM-I-TC02-4 Building Electromagnetic Shielding Characterisation using Multicopter (#1570238780) BEST SYM PAPER FINALIST★ <i>Hardie Pienaar (University of Stellenbosch, South Africa), Abraham Otto and Paul Van Der Merwe (MESA Solutions (Pty) Ltd, South Africa), David B Davidson (University of Stellenbosch, South Africa), Howard Reader (MESA Solutions (Pty) Ltd, South Africa)</i>
10:00am	SA-AM-I-SS06-5 Introduction to Side-Channel Attacks and Fault Attacks (#1570239857) <i>Yang Li, Mengting Chen and Jian Wang (Nanjing University of Aeronautics and Astronautics)</i>	SA-AM-I-TC01-5 New Method to Validate the Performance of SACs from 200 MHz to 1000 MHz (#1570239753) <i>Meng Donglin (National Institute of Metrology)</i>	SA-AM-I-TC02-5 Analysis of Uncertainty of Maximum of Electric Field in Reverberation Chamber (#1570240009) <i>Xiang Zhou and Rongsheng Wang (Southeast University)</i>

TECHNICAL SESSIONS –SATURDAY, MAY 21 2016

Room	Narcissus A	Narcissus B	Open Forum
8:40am – 10:20am	<p>TS01 Topical Symposium on IC EMC (B) <i>Chair(s): Shih-Yi Yuan, Feng Chia University</i> <i>Fabian Vargas, Catholic University – PUCRS</i></p>	<p>TC04 High Power EM <i>Chair(s): Farhad Rachidi, EPFL</i> Hideki Asai, Shizuoka University</p>	
8:40am	<p>SA-AM-I-TS01-1 Large Signal S-Parameter Measurement for Immunity Modeling of ICs (#1570240422) <i>Tohlu Matsushima, Hidetoshi Miyahara, Takashi Hisakado and Osami Wada (Kyoto University),</i></p>	<p>SA-AM-I-TC04-1 Electromagnetic Field Coupling to Transmission Lines: A Model for the Risers (#1570237650) BEST STUDENT PAPER FINALIST★ <i>Gaspard Lugrin, Nicolas Mora and Farhad Rachidi (EPFL, Switzerland), Sergey Tkachenko (Otto-von-Guericke-University)</i></p>	Exhibition is open today from 9:00am to 12:20pm.
9:00am	<p>SA-AM-I-TS01-2 Improving Spatial Resolution of Immunity Maps by Post-Processing (#1570234943) <i>Alexandre Boyer (LAAS-CNRS, France)</i></p>	<p>SA-AM-I-TC04-2 Electro-Thermal-Stress Interaction of GaN HEMT Breakdown Induced by High Power Microwave Pulses (#1570239927) <i>Liang Zhou (Shanghai Jiao Tong University), Zheng-Wei San and Liang Lin (Shanghai Jiaotong University), Wenyan Yin (Zhejiang University)</i></p>	
9:20am	<p>SA-AM-I-TS01-3 Characterization of EMI-Reducing Spread-Spectrum Techniques for Class-D Audio Amplifiers (#1570240093) BEST STUDENT PAPER FINALIST★ <i>Timucin Karaca and Mario Auer (Graz University of Technology, Austria)</i></p>	<p>SA-AM-I-TC04-3 A Dual-band Energy Selective Surface with Hexagonal Spiral Structure (#1570227377) <i>Qihui Zhou, Peiguo Liu, Chenxi Liu, Ning Zhao and Rundong Zheng (National University of Defense Technology)</i></p>	
9:40am	<p>SA-AM-I-TS01-4 Near Field Program-dependent EMI Measurement and Data Reduction for IOMarking Method (#1570240901) <i>Shih-Yi Yuan, Wang-Cheng Kang (Feng Chia Universtiy, Taiwan) and Chiu-Kuo Chen (Bureau of Standards Metrology and Inspection M.O.E.A)</i></p>	<p>SA-AM-I-TC04-4 Electro-thermal characteristics of PIN diode under HPEMP (#1570238894) <i>Yong Li, Haiyan Xie, Zhigiang Yang, Chun Xuan, and Jianguo Wang (Northwest Institute of Nuclear Technology)</i></p>	
10:00am	<p>SA-AM-I-TS01-5 Full-Wave Eigenvalue Approach to the Analyses of Uniform and Non-Uniform Microstrips (Invited) (#1570248699) <i>Xuru Li, Hsien Shun Wu (Millimeter-Wave and THz Technologies Transcend Research Center), Ching-Kuang Tzuang (Beijing University of Technology)</i></p>	<p>SA-AM-I-TC04-5 A Simplified Method for Parameter Estimating of Double Exponential Pulse (#1570239755) <i>Yuewu Shi, Xin Nie, Zhizhen Zhu and Hui Zhou (State Key Laboratory of Intense Pulsed Radiation Simulation and Effect & Northwest Institute of Nuclear Technology)</i></p>	

TECHNICAL SESSIONS –SATURDAY, MAY 21 2016

Rooms	Rose 1	Rose 2	Rose 3
10:40am – 12:20pm	SS06 EM Information Leakage from Commercial Devices and Its Countermeasure <i>Chair(s): William A Radasky, Metatech Corporation</i> <i>Yuichi Hayashi, Tohoku Gakuin University</i>	SS07 Practical challenges and computational analysis of system-level EMC <i>Chair(s): Richard Gao, A*STAR IHPC</i> <i>Wee Jin Koh, DSO National Laboratories</i>	TC02 EMC Measurement and EM Environment <i>Chair(s): Shinichi Okuyama, VCCI Council / NEC Platforms</i> <i>Yaojiang Zhang, Huawei Technologies</i>
10:40am	SA-AM-ISS06-1 Simulation Methodology of EM Information Leakage from Cryptographic Devices (#157023984) <i>Kengo Iokibe and Yoshitaka Toyota (Okayama University)</i>	SA-AM-II-SS07-1 Electromagnetic Compatibility (EMC) Management Challenges on Tuas West Extension (TWE) Project (#1570238839) <i>Yujie Zhang and Kathy Neo (Land Transport Authority, Singapore), Boon Toon Loi (LTA)</i>	SA-AM-II-TC02-1 MIL-STD461F CS101 Testing and Power Frequency Cancellation (#1570240170) <i>Soydan Cakir, Mesut Ozturk, Osman Sen, Bahadir Tektas, Savas Acak and Mustafa Cetintas (TUBITAK UME, Turkey)</i>
11:00am	SA-AM-II-SS06-2 Evaluation of Information Leakage caused by Hardware Trojans Implementable in IC Peripheral Circuits (#1570239502) <i>Masahiro Kinugawa (National Institute of Technology, Sendai College, Japan), Yuichi Hayashi (Tohoku Gakuin University)</i>	SA-AM-II-SS07-2 Common-Mode Filter using Cavity-Backed Defected Ground Structure for Multilayer PCB (#1570240520) BEST SYMPOSIUM PAPER FINALIST★ <i>Si-Ping Gao, Hui Min Lee, Xian-Ke Gao(A*STAR-IHPC), Pingfang Yu, Cunhui Zhan, and Xueli Feng (Huawei Technologies Co. Ltd.), En-Xiao Liu, and Ching Eng Png (Institute of High Performance Computing, Singapore)</i>	SA-AM-II-TC02-2 Study of the choice of the origin in spherical harmonics expansion for magnetic near-field sources (#1570239038) BEST STUDENT PAPER FINALIST★★ <i>Zhao Li and Francois Tavernier (Université de Lyon, France), Arnaud Breard (Ecole Centrale Lyon, France), Laurent Krähenbühl (Ecole Centrale de Lyon & CNRS, France), Damien Voyer (INSA Lyon, Lebanon)</i>
11:20am	SA-AM-II-SS06-3 A New Method to Recognize Computer through Electromagnetic Radiation (#1570237704) <i>Degang Sun, Jun Shi, Dong Wei Meng Zhang, Weiqing Huang, Xuguang Qiu (Institute of Information Engineering, Chinese Academy of Sciences)</i>	SA-AM-II-SS07-3 Pre-layout Multi-Layer PDN Model for High-Speed Board (#1570238644) <i>Jun Wu Zhang, Eng Kee Chua, Kye Yak See, (Nanyang Technological University, Singapore), Wee Jin Koh, Weng Yew Chang (DSO National Laboratories)</i>	SA-AM-II-TC02-3 Improvement in the Reproducibility of Radiated Emission Measurements in a Fully Anechoic Room by Using VHF-LISN to Control the Termination Condition of the AC Mains Cable Leaving the EUT (#1570234694) <i>Shinichi Okuyama (VCCI Council / NEC Platforms, Japan), Nobuo Kuwabara (Kyushu Institute of Technology, Japan), Masanori Yamaguchi (EMC Education, Japan), Kunihiro Osabe (VCCI Council, Japan)</i>
11:40am	SA-AM-II-SS06-4 Countermeasure for Electromagnetic Information Leakage of Digital Video Cable (#1570234537) <i>Sen Wang, Yang Qiu, Jin Tian and Qinglin Xu (Xidian University)</i>	SA-AM-II-SS07-4 Efficient EMC Modeling Tool for Complex Onboard Antenna Problems with a Flexible Fast MoM-PO Hybrid Framework (invited) (#1570238837) <i>Zi-Liang Liu and Chao-Fu Wang (National University of Singapore)</i>	SA-AM-II-TC02-4 Estimation of Deviation of Conducted Emission Measurement without LISN (#1570241247) <i>Kangrong Li and Kye Yak See (Nanyang Technological University, Singapore)</i>
12:00pm	SA-AM-II-SS06-5 Transient Communication: A New Paradigm (invited) (#1570251106) <i>Yifan Chen and Qingfeng Zhang, Southern University of Science and Technology, Shenzhen</i>	SA-AM-II-SS07-5 RC for Pulse HIRF Testing (#1570238858) <i>Wee Jin Koh, Wei Jian Foo and Yew Seng Ng (DSO National Laboratories, Singapore)</i>	SA-AM-II-TC02-5 Max-hold Frequency-domain Measurement for Noise Cancellation (#1570238735) <i>Yuanyuan Li, Shuguo Xie, Tong Zhang and Xuchun Hao (Beihang University)</i>

TECHNICAL SESSIONS –SATURDAY, MAY 21 2016

Rooms	Narcissus A	Narcissus B	Open Forum
10:40am – 12:20pm	TC09 IC and Semiconductor EMC <i>Chair(s): A. Boyer, LAAS-CNRS Fabian Vargas, Catholic University – PUCRS</i>	TS03 Topical Symposium on Wireless Power transfer Technologies <i>Chair(s): Jounggho Kim, KAIST Zhengmin Zhao, Tsinghua University</i>	
10:40am	SA-AM-II-TS01-1 Construction of an Integrated Circuit Emission Model of a FPGA (#1570239267) BEST SYMPOSIUM PAPER FINALIST★ <i>Chaimae Ghfiri (IRT SAINT EXUPERY, France), Alexandre Boyer (LAAS-CNRS, France), Andre Durier (IRT Saint-Exupery, France), Sonia Ben Dhia and C. Marot (INSA de Toulouse, France)</i>	SA-AM-II-TS03-1 A Comparative Study of Load Characteristics of Resonance Types in Wireless Transmission Systems (#1570238028) BEST SYMPOSIUM PAPER FINALIST★ <i>Fang Liu, Yiming Zhang, Kainan Chen, Zhengming Zhao, and Liqiang Yuan (Tsinghua University)</i>	Exhibition is open today from 9:00am to 12:20pm.
11:00am	SA-AM-II-TS01-2 Analysis of FPGA SEU Sensitivity to Combined Effects of Conducted EMI and TID (#1570240355) <i>Juliano Benica, Bruno Green, Bruno C. Porcher, Letícia Bolzani Poehls, Fabian Vargas (Catholic University – PUCRS, Brazil), Nilberto H. Medina, Nemitala Added, Vitor A. P. de Aguiar, Eduardo L. A. Macchione, Fernando Aguirre (Sao Paulo University – USP), Marcilei A. G. da Silveira (Centro Universitário – FEI)</i>	SA-AM-II-TS03-2 Visualize Wireless Power Transfer Efficiency with Network Analyzers (#1570238915) <i>Hidekazu Manabe; Hiroshi Kanda, Hui Wu and Mingyan Wang (Keysight Technologies International)</i>	
11:20am	SA-AM-II-TS01-3 Analysis of Filtering Characteristics for Coplanar Symmetrical Meander Lines (#1570246746) <i>Bo Pu (Samsung Electronics, Korea), Kwangho Kim, Jawad Yousaf and Wansoo Nah (Sungkyunkwan University)</i>	SA-AM-II-TS03-3 Fault Analysis and Protection Strategy on Contactless Power Transfer System for Electric Vehicle (#1570237997) <i>Liye Wang, Lifang Wang, Chenglin Liao, Zhigang Zhang and Qingwei Zhu (Chinese Academy of Sciences)</i>	
11:40am	SA-AM-II-TS01-4 Experimental Evaluation of Forward Wave Analysis (#1570238970) <i>Umberto Paoletti (Hitachi, Ltd., Research & Development Group, Center for Technology Innovation, Japan), Akio Ikeia (Hitachi, Ltd., Information & Telecommunication Systems Company)</i>	SA-AM-II-TS03-4 Study on Transmission Characteristics of Resonant Coupling Wireless Power Transfer System with Double Receivers (#1570237295) <i>Shulei Pan, Xueliang Huang, Wei Wang and Linlin Tan (Southeast University)</i>	
12:00pm	SA-AM-II-TS01-5 Study of Frequency-to-Voltage Converter immunity to fast transient pulses (#1570240165) <i>Yuan Gao, Kamel Abouda, Remi Beges and Patrice Besse (NXP, France),</i>		
12:20pm	SA-AM-II-TS01-6 A Model for the Jitter of the Clock Path Under External Electromagnetic Interference (#1570239519) <i>Simei Yang, DiHu Chen, Tao Su (Sun Yat-sen University)</i>		

TECHNICAL SESSIONS –SATURDAY, MAY 21 2016

Room	Rose 1	Rose 2	Rose 3
01:30 – 03:30pm	TC13 Wireless Communication EMC <i>Chair(s): HarkByeong Park, Samsung Electronics Liu Jianfei, HBUT</i>	TC11 CEM and Multiphysics <i>Chair(s): Yong-Dan Kong, South China University of Technology Tzong-Lin Wu, National Taiwan University</i>	TC05 System Level EMC and Protection <i>Chair(s): Ming Ye, Huawei Technologies AB Yuichi Watanabe, JFE Steel Corporation</i>
01:30pm	SA-PM-I-TC13-1 Proposal of decoupling technique for intra-EMC (#1570239987) <i>Tomoya Maekawa (Panasonic, Japan), Kun Li and Kazuhiro Honda, Koichi Ogawa (University of Toyama& Faculty of Engineering)</i>	SA-PM-I-TC11-1 Stability of the Extended Four-Step ADI-FDTD Method Including Lumped Elements (Invited) (#1570254895) <i>Yong-Dan Kong and Qing-Xin Chu (South China University of Technology.)</i>	SA-PM-I-TC05-1 A Study on Characteristics of Electromagnetic Waves Propagating through the Space between Overlapped Metal Plates: Part-I (#1570239949) <i>Yuichi Watanabe (JFE Steel Corporation, Japan)</i>
01:50pm	SA-PM-I-TC13-2 PMDA-schemed EM channel estimator for OFDM systems (#1570222537) <i>Li Xiaofei (East China Normal University & Wuyi University), Di He (Shanghai Jiao Tong University), Hung Ching-Jer (Wuyi University)</i>	SA-PM-I-TC11-2 A Radiation Prediction Method based on Partial Element Equivalent Circuit (Invited) (#1570239990) BEST SYMPOSIUM PAPER FINALIST★ <i>Yi-An Hsu, Chiu-Chih Chou, Chi-Hsuan Cheng and Tzong-Lin Wu (National Taiwan University)</i>	SA-PM-I-TC05-2 Absorption Cross Section Measurement of Stacked PCBs in a Reverberation Chamber (#1570243220) <i>Sarah Parker, Ian Flintoft, Andy Marvin, John Dawson, Simon Bale, Martin Robinson (University of York, UK), Ming Ye (Huawei Technologies AB, Sweden), Changyong Wan and Mengze Zhang (Huawei Technologies Co. Ltd.,)</i>
02:10pm	SA-PM-I-TC13-3 An Improved Method for Power and SIR Validation on MPAC MIMO OTA System (#1570239659) <i>Jiang Xiao (ETS-lindgren)</i>	SA-PM-I-TC11-3 An Alternative Solution Method for Hybrid Discrete Singular Convolution-Method of Moments Modeling of Reverberation Chambers (#1570243111) <i>Huapeng Zhao, Jun Hu, and Zhizhang Chen (University of Electronic Science and Technology of China)</i>	SA-PM-I-TC05-3 Design Aspects for HIRF Protection of a Rectangular Metallic Cavity using Energy Selective Diode Grids (#1570233804) <i>Cheng Yang (National University of Defense Technology), Heinz-D. Brüns (Technischen Universität Hamburg-Harburg, Germany), Peiguo Liu (NUDT), Christian Schuster (Technischen Universität Hamburg-Harburg)</i>
02:30pm	SA-PM-I-TC13-5 LTE Antenna System in Network Detection and Fault Diagnosis (#1570240145) <i>Feng Gao, Wentao Zhu, Hekai, Lifang Wang (China Mobile Group Design Institute Co., Ltd), Yuli (China Mobile Group Co., Ltd)</i>	SA-PM-I-TC11-4 Uncertainty Analysis of Random Field Coupling to Stochastic Cables (#1570238458) <i>Tianhao Wang and Wanquan Yan, Lixin Wang, and Gang Zhang (Harbin Institute of Technology)</i>	SA-PM-I-TC05-4 Statistical Analysis of EM Field Distribution in Electrically Large Enclosures with Rectangle Aperture of Different Sizes (#1570240054) <i>Yuan Zhao, Xiang Zhao and Liping Yan (Sichuan University), Haijing Zhou (Institute of Applied Physics and Computation Mathematics), Kama Huang (Sichuan University)</i>
02:50pm	SA-PM-I-TC13-6 Adaptive Self-interference Cancellation in Broadband Full-Duplex MIMO Relays (#1570239852) <i>Jianfei Liu, Qian Rong and MengJun Wang (Hebei University of Technology, Tianjin)</i>	SA-PM-I-TC11-5 Inverse Scattering based Through Wall Imaging (#1570240037) <i>Xiuzhu Ye, Fang Xiao (Beihang University), Jianhua Shen (The 54th Research Institute of CETC), Lixin Ran (Zhejiang University), Xudong Chen (National University of Singapore)</i>	SA-PM-I-TC05-5 Shielding Effectiveness Measurement of Small Size Metal Enclosure (#1570239392) <i>Cong Zhou, Liangqi Gui and Lang Lv (Huazhong University of Science and Technology)</i>
03:10pm			SA-PM-I-TC05-6 Crosstalk Model for Shielded Bundles of Random Twisted-Wire Pairs (#1570240057) <i>Xinwei Song, Junjun Wang, Bing Li and Donglin Su (Beihang University)</i>

TECHNICAL SESSIONS –SATURDAY, MAY 21 2016

<i>Time</i>	<i>Narcissus A</i>	<i>Narcissus B</i>	<i>Open Forum</i>
01:30pm – 03:30pm	TC15 Antennas and Propagation (B) <i>Chair(s): Huapeng Zhao, UESTC</i> <i>Xiu Yin Zhang, South China University of Technology</i>	TS03 Topical Symposium on Wireless Power transfer Technologies <i>Chair(s): Jounggho Kim, KAIST</i> <i>Zhengmin Zhao, Tsinghua University</i>	
01:30pm	SA-PM-I-TC15-1 Suppression of the Unwanted Band of Ultra -Wide Band Antenna by Resonant Structure (#1570240008) <i>Chun-Te Wu (Da-Yeh University, Taiwan), Po-Yi Chu (Bureau of Standards, Metrology & Inspection), and Cheng-Nan Chiu (Da-Yeh University, Taiwan), Han-Chang Hsieh (Bureau of Standards, Metrology & Inspection)</i>	SA-PM-I-TS03-1 Magnetic Field Levels in Drones Equipped with Wireless Power Transfer Technology (#1570239764) <i>Tommaso Campi, Frederic Dionisi, Silvano Cruciani and Valerio De Santis (University of L'Aquila, Italy); Francescaromana Maradei (University of Rome La Sapienza, Italy); Mauro Feliziani (University of L'Aquila, Italy)</i>	
01:50pm	SA-PM-I-TC15-2 High Gain Filtering Antenna for WCDMA application (Invited) (#1570239928) <i>Xiao-Lan Zhao, Te Mo and Wen Duan, Xiu Yin Zhang (South China University of Technology)</i>	SA-PM-I-TS03-2 Comparison of Two Bidirectional Wireless Power Transfer Control Methods (#1570235296) BEST STUDENT PAPER FINALIST★★ <i>Yiming Zhang, Fanbo He, Fang Liu, Kainan Chen, Zhengming Zhao and Liqiang Yuan (Tsinghua University)</i>	
02:10am	SA-PM-I-TC15-3 Antenna Optimization Layout on The Equivalent Cylinder of UAV Using GA (#1570241835) <i>De-ting Hou, Shuai-tao Han (University of Testing)</i>	SA-PM-I-TS03-3 EMI Reduction Method of Three Phase WPT Charger for Drone with Duty Control of VSI (#1570238802) <i>Chiuk Song, Hongseok Kim, Kibum Yoon, Yeonje Cho, Seongsoo Lee, Seungtaek Jeong (KAIST), Kyoungyoung Jo, Youngbeom Kim, Heechang Moon, and (Unmanned Solution, Korea); Jounggho Kim (KAIST)</i>	
02:30pm	SA-PM-I-TC15-4 Electromagnetic Coupling Mechanism in Vertical and Horizontal SRR-Loaded Coplanar Waveguide (#1570240634) <i>Ashif Aminulloh Fathnan, Taufiqurrachman Taufiq, Yusuf Nur Wijayanto, Dadin Mahmudin and Pamungkas Daud (Indonesian Institute of Sciences, Indonesia)</i>	SA-PM-I-TS03-4 Numerical Analysis on Load Modulation in HF Wireless Power Transfer Using Parallel Line Feeder (#1570240132) Takuya Okamoto, Duong Quang Thang, Takeshi Higashino, Minoru Okada (Nara Institute of Science and Technology)	
02:50pm	SA-PM-I-TC15-5 Segmented line array antenna for UHF near field RFID application (#1570239202) <i>Cheng Huang and Laiwei Shen (Nanjing University of Science and Technology), Wei Zhuang and Wanchun Tang (Nanjing Normal University)</i>	SA-PM-I-TS03-5 Bending Effects on a Flexible Yagi-Uda Antenna for Wireless Body Area Network (#1570243885) <i>Jianying Liu, Fang Dai, Yichen Zhang, Xin Yu, Lulu Cai, Panpan Zuo and Mengjun Wang (Hebei University of Technology)</i>	
03:10pm	SA-PM-I-TC15-6 A Novel Design on miniaturized slot antennas loaded with silts for WLAN applications (#1570236779) <i>Zhu Li Xiang-jun Gao (Air Force Engineering University), and Yao-ping Yan (Datang Linktech Informationsystem Co.,Ltd.)</i>		

TECHNICAL SESSIONS –SATURDAY, MAY 21,2016

Rooms	Rose 1	Rose 2	Rose 3
03:50pm – 05:50pm	TC 06 Transportation EMC <i>Chair(s): Sergio A Pignari, Politecnico di Milano</i> <i>LinBiao Wang</i>	TS04 Topical Mini-Symposium on Bio-EM (B) <i>Chair(s): Guizhi Xu, Hebei University of Technology</i> <i>Eung-Je Woo, Kyung Hee University</i>	TU08 Correct Calibration and Application of Dipole-like Antenna Factors <i>Organizer(s): Donglin Meng and Weilong Wang, NIM</i>
03:50pm	SA-PM-II-TC06-2 Influence of RF Noise on Automotive TFT Power Distribution Network on Radiated Emissions (#1570238903) <i>Lin Biao Wang, Wai Kin Chua (Continental Automotive Singapore Pte Ltd, Singapore), Kye Yak See and Jun Wu Zhang (Nanyang Technological University)</i>	SA-PM-II-TS04-1 Impact of H-field Generated by Electric Vehicles on Brain Waves and Neuro-Psychological Changes (#1570239926) <i>Yaqing He, Yinliang Diao, Weinong Sun and Sai Wing Leung, Yun Ming Siu (City University of Hong Kong)</i>	SA-PM-II-TU08-1 The Accurate Calibration and Application of dipole-like Antenna Factors <i>Dr. Donglin Meng, National Institute of Metrology</i>
04:10pm	SA-PM-II-TC06-3 Behavioral modeling of tubular wave coupler (#1570240004) <i>Flavia Grassi, Sergio A Pignari, Giordano Spadacini and Nicola Toscani (Politecnico di Milano, Italy), Patrice Pelissou (Airbus Defence & Space, France)</i>	SA-PM-II-TS04-2 In vivo Imaging of Regional Air Distributions in Porcine Lungs using Electrical Impedance Tomography (EIT) (#1570254170) <i>Hun Wi, Geuk YoungJang (Kyung Hee University, Korea), Chi Ryang Chung (Sungkyunkwan University, Korea), Tong In Oh (Kyung Hee University, Korea), Gee Young Suh (Sungkyunkwan University, Korea), and Eung Je Woo (Kyung Hee University)</i>	
04:30pm	SA-PM-II-TC06-4 EMI Measurement on Electric Vehicle Drive Inverters using a Passive Motor Impedance Network (#1570238731) <i>Sebastian Jeschke, H. Hirsch, M. Trautmann (University of Duisburg-Essen,), J. Bärenfänger and M. Maarleveld (EMC Test NRW GmbH, Germany), M. Obholz and J. Heyen (Volkswagen AG)</i>	SA-PM-II-TS04-3 Functional Brain Network Analysis during Auditory Oddball Task (#1570251602) BEST STUDENT PAPER FINALIST★ <i>Miaomiao Guo, Guizhi Xu, Lei Wang and Lingdi Fu (Hebei University of Technology)</i>	SA-PM-II-TU08-2 New Requirement for VSWR & Symmetry of Hybrid Antenna from ANSI C 63.4-2014 <i>Mr. Jung-Chun Tsai, Electronics Testing Center</i>
04:50pm	SA-PM-II-TC06-5 Electromagnetic Compatibility - Railway Radiated Electromagnetic Emission to environment and the control methodologies (#1570238218) <i>Boon Toon Loi and Ron Yong (LTA, Singapore)</i>	SA-PM-II-TS04-4 Assessment of Magnetic Field Exposure Emitted from Inverter System of a Hybrid Vehicle (#1570251519) <i>Kyoseung Keum, Hojoo Lee, Seongkyu Lee Jaekon Shin, Jaehoon Choi (Hanyang University)</i>	
05:10pm	SA-PM-II-TC06-6 Research on Noise Figure of a Receiving System Using Adaptive Interference Cancellation (#1570239599) <i>Jian Tang, Zhihua Zhao, Wei Li, Jin Meng, Yi Li, Fangmin He and Huan Xiao (Naval University of Engineering)</i>	SA-PM-II-TS04-5 A High-Temperature Superconducting RF Coil Design for Low Field MRI (#1570251002) <i>Shufeng Wei and Wenhui Yang (IEE, CAS)</i>	SA-PM-II-TU08-3 The calibration and application of Rod antennas in EMC <i>Weilong Wang, National Institute of Metrology</i>
05:30pm		SA-PM-II-TS04-6 Deep Transcranial Magnetic Stimulation Using Deformed Halo-Circular Assembly Coil (#1570251768) <i>Mai Lu, Xu-Wei Dong (Lanzhou Jiaotong University), Shoogo Ueno (Kyushu University)</i>	
05:50pm		SA-PM-II-TS04-7 Design and Implementation of High Speed Data Acquisition Card Based on FPGA for Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometer (#1570250333) <i>Qian Li (University of Chinese Academy of Sciences); Ming Wang and Yang Yu (IEE, Chinese Academy of Sciences)</i>	

TECHNICAL SESSIONS –SATURDAY, MAY 21, 2016

Rooms	Narcissus A	Narcissus B	Open Forum
03:50pm – 05:50pm	TC 15 Antennas and Propagation (C) <i>Chair(s): Yifan Chen, Southern University of Science and Technology</i>		
03:50pm	SA-PM-II-TC15-1 OAM Radio Waves Generation Using Dielectric Resonator Antenna Array (#1570239878) BEST STUDENT PAPER FINALIST★★ <i>Muhammad Rizwan Akram, Liangqi Gui and Dandan Liu (Huazhong University of Science and Technology)</i>		
04:10pm	SA-PM-II-TC15-2 Shift Effects of Resonant Frequency on Jerusalem-Cross Frequency Selective Surface (#1570228805) <i>Hsing-Yi Chen, Shu-Huan Wen (Yuan Ze University)</i>		
04:30pm	SA-PM-II-TC15-3 Wideband Collar-Shaped Antenna for RF Energy Harvesting (#1570238503) <i>Juan Wen, Danpeng Xie, Xueguan Liu, Huiping Guo, Xin Mi Yang (Soochow University)</i>		
04:50pm	SA-PM-II-TC15-4 The Time-Domain E-field Probe Using RF-Over-Fiber and Power-Over-Fiber Technology (#1570237529) <i>Shao-Nan Hong (National Kaohsiung University), Cheng Chia Lin (National Kaohsiung Normal University), Sung-Mao Wu, (National Kaohsiung University) Jian-Ming Wu (National Kaohsiung Normal University)</i>		
05:10pm	SA-PM-II-TC15-5 Research on Dual Exponential Tapered Slot Antenna in W-band (#1570239432) <i>Nannan Wang, Liqing Wang, Yanzhi Fu, Liyi Xiao (Harbin Institute of Technology)</i>		

INDUSTRIAL SESSION

The Industrial Session will be held in the afternoon of May 19, 2016. The speakers from industries will present their latest EMC technologies on their product developments as well as new EMC applications.

INDUSTRIAL PRESENTATIONS	Industrial Presentations
TIME	1:30pm – 5:50pm, Thursday, May 19, 2016
VENUE	Rose 1

01:30-2:30pm

► EMC Test and Design Technology (电磁兼容测试和设计技术)

By *Xin Liwen, Compliance Direction Systems Inc. (主讲人: 邢立文, 容向公司)*

Abstract: The lecture of "EMC testing and design" is focused on electromagnetic compatible (EMC) design technology for PCBs. Its targeted audiences are hardware design engineers, EMC Engineers, and quality engineers. It will use variety of specific real-world cases to illustrate lively and clearly how to deal with the EMC problem in PCB design. With its very rich and comprehensive content, this hot topic and the lecture have been always the highlights in the previous EMC exhibitions.

内容概要: 容向公司的《电磁兼容测试和设计技术》讲座, 内容以 PCB 的电磁兼容设计技术为主, 主要对象是硬件工程师, EMC 工程师, 质量工程师等, 采用大量具体案例, 生动而清晰地总结了在 PCB 设计中如何控制电磁兼容问题, 内容非常丰富全面, 是历届电磁兼容展览会上的亮点和热点。

02:30-3:45pm

► EMC Cases Analysis and Theory Introduction (EMC 案例分析及理论导论)

By *Lei Guanghua, Würth Elektronik eiSos GmbH & Co. KG*
(主讲人: 雷冠华, 伍尔特电子集团有限公司)

03:50-4:50pm

► Mobile Antenna Design Optimization using Vector SAR Measurement Technology

运用矢量 SAR 量测技术优化手机天线设计.

By *Benoit Derat, CEO, ART-Fi SAS*

4:50-5:50pm

► Modern EMC Receiver Technologies for Existing and Emerging Test Applications

By *Mark Terrien, Worldwide EMC Business Manager, Keysight*

Abstract: Modern technologies in receivers and spectrum analyzers provide the EMC test community with new tools to improve measurement accuracy and reduce data collection, analysis and troubleshooting times. These tools provide significant improvement in operational efficiencies and time-to-market across all industries, including growing markets such as IoT devices, electric/hybrid automobiles and modern health care electronics. This paper will provide an overview of the current standards requirements (CISPR, ANSI and MIL STD) for these instruments, describe the changes in modern instrument design, discuss the technologies behind the advances and highlight the benefits to the EMC test community.

TECHNICAL EXHIBITIONS

Operations/Event Schedule

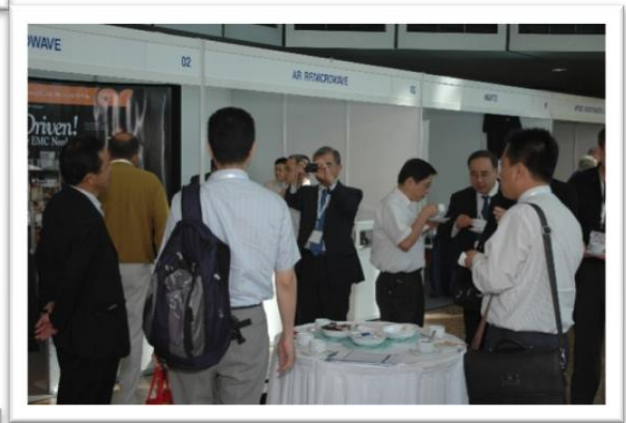
Booth Build-Up	May 18, 2016 2:00pm – 8:00pm (Exhibitor Move-In)
Exhibition Dates & Time :	May 19, 2016 9:00am – 5:30pm May 20, 2016 9:00am – 5:30pm May 21, 2016 9:00am – 3:00pm
Exhibitor Registration :	May 18, 2016 3:00pm – 5:00pm May 19, 2016 8:30am – 4:00pm
Exhibition Tear-Down :	May 21, 2016 4:00pm – 6:00pm



EXHIBITORS



APEMC Exhibition 2008, 2012



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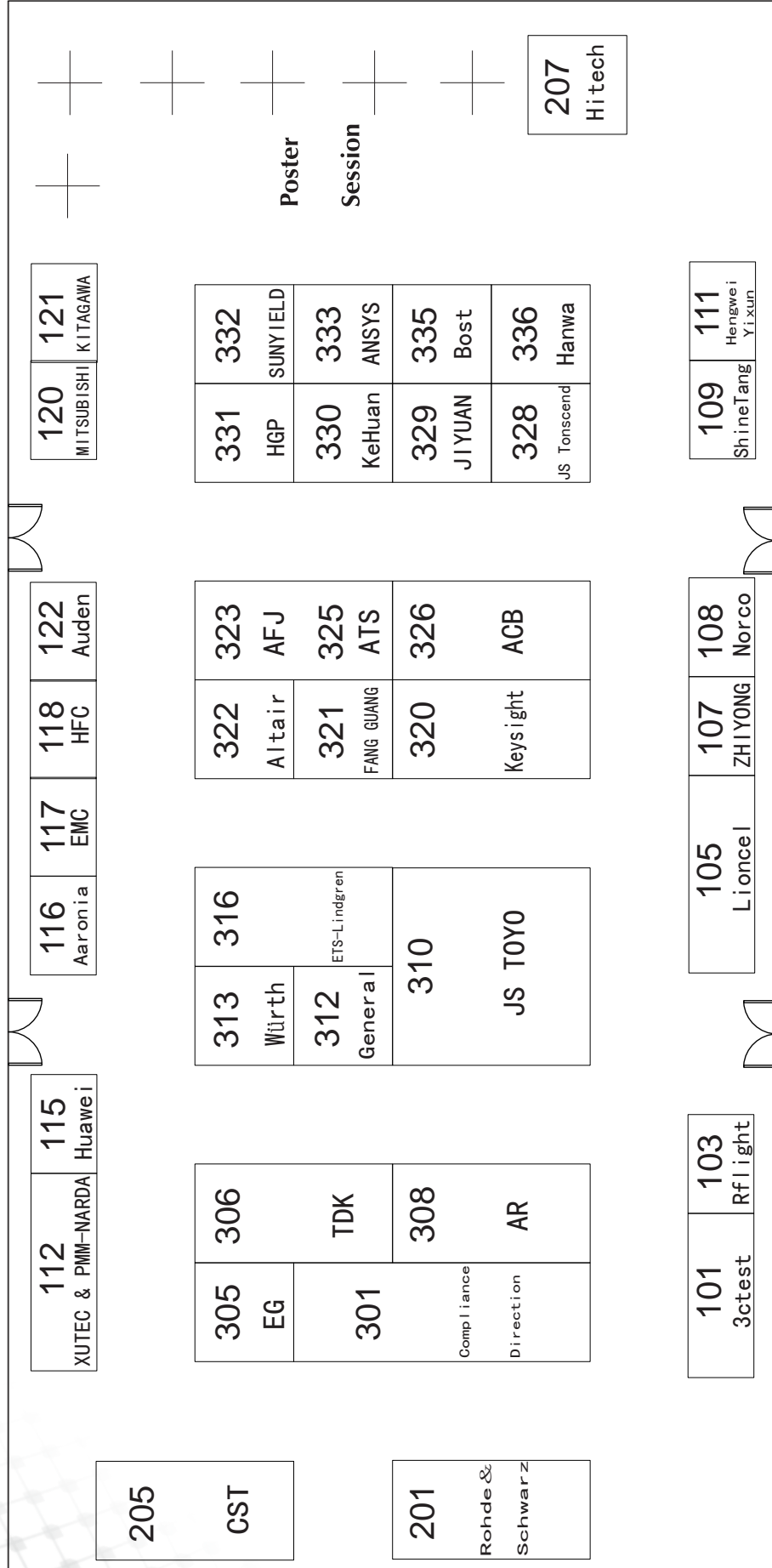
APEMC2016电磁兼容会

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May 19-21, 2016 Shenzhen Convention & Exhibition Center 5th Floor, Orchid Hall



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Aaronia China**安诺尼中国-深圳市拓力智慧科技有限公司****Booth No.: 116**

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Aaronia AG is a startup company based in Euscheid, Germany. Aaronia was founded in 2003 by Thorsten Chmielus and mainly produces Spectrum Analyzers which base on a patented spectrum analyzer process. In 2004 Aaronia shipped its first spectrum analyzer. In 2008 Aaronia announced the latest generation of the SPECTRAN Spectrum Analyzer, the V4 series, the first RF analyzer which reaches a world record analyzer-sensitivity of -170dBm DANL.

Today's purpose of the enterprise is development, trade and sale of measuring equipment, technologies and rights of low and high frequency measurement technique, robotics as well as screening/shielding of RF and E-fields and fundamental research at the segment of communications and measurement engineering, furthermore the construction of own circuitries and measuring methods in particular for the development of extreme sensitive and precise high-frequency measurement devices and autonomic robotics-systems.

Contact person: Ting Zhang 张艇**Email: mail@aaronia-china.com****URL: www.aaronia-china.com****AFJ INSTRUMENTS****安辐捷 (AFJ) 仪器有限公司****Booth No.: 323**

意大利 AFJ 是专业的 EMC 仪器制造公司, 位于米兰, 致力于研创信赖度高与具经济效应的仪器, 并依循电磁兼容(EMC)、射频监控、安规产品、电子测试与量测以及工业设备领域的各项标准要求来提供符合世界各国的测试需求。

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AFJ Instruments is an Italian Company which mission is to respond to the worldwide requirement of innovative, reliable and cost effective instrumentation, to comply with Standards in the domain of EMC, RF Monitoring, Safety Products, Electronic Test & Measurement and Industrial Appliances.

Products range includes FFT-Based EMI Receivers, Click Analysers, LISN, Van Veen Loop, Antenna, Van Der Hoofden Test Head and measuring transducers compliant to CISPR 16 International standard for measurements of conducted and radiated electromagnetic interference in accordance with the requirements of EMI International, European and Product standards.

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安辐捷 (AFJ) 仪器有限公司



Booth No.: 322

Founded in 1985, Altair is headquartered in Troy Michigan with regional operations throughout 22 countries and a staff of more than 2,300 innovative employees. It's customers are over 7,000 worldwide. Altair's corporate culture thrives on seeking out business and technology firsts to radically change the way organizations design products and make decisions. We are focused on the development and broad application of simulation technology to synthesize and optimize designs, processes and decisions for our clients' improved business performance. As a product of Altair, FEKO is a comprehensive electromagnetic simulation software tool for the electromagnetic field analysis of 3D structures. It offers multiple state-of-the-art numerical methods for the solution of Maxwell's equations, enabling its users to solve a wide range of electromagnetic problems encountered in various industries.

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American Certification Body, Inc.

American Certification Body & ART-Fi SAS

Booth No.: 326

ACB 是一家无线产品认证机构，主要的认证服务包括 FCC、CE、IC、MIC 及其他国际认证。ACB 同时代理提供大中国地区 iNARTE 的 EMC、ESD、Safety 等领域的工程师考试认证，及 ACLASS 17025 实验室质量体系辅导与申请。

ART-Fi 公司是一家专注于设计及输出 EMF 测试设备与技术的公司，旨在支持无线业界实时将合乎法规的创新产品上市销售。根据多年来辐射测试的经验，ART-Fi 已经发展出 ART-MAN，一台能在数秒内执行准确 SAR 测试的仪器。该仪器使用射频向量场探针技术融合符合国际标准的宽带仿真组织液来达成快速量测的目的。

ACB provides Wireless Certification for Global Markets and your source for FCC, CE, IC, MIC and more. ACB also provides services for iNARTE exam and ACLASS 17025 application in China.

ART-Fi designs and sells EMF measurement instrumentation and expertise to support the wireless industry in efficient delivering of innovative and regulatory compliant products. From years of experience in dosimetric assessment, ART-Fi has created ART-MAN. ART-MAN is the only system capable of accurate SAR measurement in a matter of seconds. This powerful instrument uses a unique radiofrequency vector field probe technology immersed in broadband tissue-simulating material meeting international standards requirements.

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Angstrom Materials Inc.

广州埃米石墨烯投资管理有限公司

Booth No.: 109

Angstrom Materials Inc. (AMI) 2007年成立，公司总部位于 Dayton Ohio, USA，为专业石墨烯 (Graphene) 开发制造商。主要开发石墨烯及氧化石墨烯相关材料及产品。由张博增博士及 Dr.Aruna Zhamu 创立，对石墨烯产业有近 15 年的研发经验。过去获得美国能源部、美国国家自然科学基金及美国国家标准总局研究基金，技术具备优势。除石墨烯原材料以外，AMI 也致力于石墨烯应用的研究，如电池、散热片、散热膏、电磁屏蔽材料、导电银浆及超级电容等多项产品，达到 100 多项发明专利，其中 90 多项石墨烯材料产品已经获得美国专利。

AMI 是全球一家将单层石墨烯产业化的公司，是世界上一个原始石墨烯生产专利 (美国专利 7.071.258) 申请日 2002 年 10 月 21 日。全球一家石墨烯公司通过 ISO9001: 2008 认证，目前总公司及台湾分公司已经达到了年产 300 吨单层氧化石墨烯的产能。

广州埃米石墨烯投资管理有限公司主营业务为石墨烯科技的推广与应用，由范国强先生创立。广州埃米石墨烯投资管理有限公司于 2015 年上旬财务投资了美国石墨烯制造企业 Angstrom Materials Inc. (AMI), 同时也作为 AMI 公司中国区商务代表，主要负责先进石墨烯材料在中国的推广应用。除了销售和推广 AMI 石墨烯材料，同时我们在应用端积极与企业、高校和科研院所合作研发新产品，推动和促进研发成果的产业化应用。

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AR RF/Microwave Instrumentation(◆SPONSOR◆)**Booth No.: 308**

Whether you need RF or microwave benchtop or rack mounted amplifiers, amplifier modules, complete EMC test systems, EMI receivers, automated software, or any engineering help with EMC and Wireless and beyond, there's one source to turn to: AR. The parent company consists of AR RF/Microwave Instrumentation, AR Modular RF, AR Receiver Systems and AR Europe.

AR RF/Microwave Instrumentation – Souderton, PA

- ▶ RF Solid State Power Amplifiers to 1000 MHz Up To 50,000 Watts
- ▶ Microwave Solid State and TWT CW and Pulsed Amplifiers to 50 GHz Up To 20,000 Watts
- ▶ Antennas to 50 GHz
- ▶ Hybrid Power Modules From 0.7 – 6 GHz to 350 Watts
- ▶ RF Conducted Immunity Test Systems
- ▶ EMC/RF Test Systems
- ▶ Accessories and Software
- ▶ Electromagnetic Safety Products

AR Competitive Edge products supply a multitude of unique RF solutions to companies around the world. The company's limitless support network reaches all corners of the globe. AR products are backed by the company's "Competitive Edge" warranty, the best and most comprehensive in the industry. When companies purchase from any AR company, they have the peace of mind that comes from knowing the global leader will be there to help with any problems today, tomorrow and always. www.arworld.us.

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ATS Technology Limited
广州众测电子科技有限公司

Booth No.: 325

ATS 众测是从事于试验室建设技术服务的专业公司,拥有多专业的、具有二十多年产品检测认证、试验室建设与管理的专家团队,包括电磁兼容(EMC)、环境可靠性与安规等方面。

ATS 众测致力于产品技术法规、标准和检测技术研究,能为客户提供试验室建设技术方案咨询、试验室建设规划与监理服务,以及检测技术培训等。

ATS 众测拥有 20 多年 EMC 标准与测试经验的 EMC 专家团队,熟悉各领域的 EMC 标准、测试仪器和系统,是众多国际知名品牌 EMC 设备国内代理商;销售与集成各类测试仪器设备、测试系统,具备强大的 EMC 系统集成能力,可以提供交钥匙 EMC 实验室建设工程服务。

ATS is professional Lab Solutions Provider with more than 20 years experience in lab engineering and lab management, product testing and certification in many technical fields such as EMC (Electro-Magnetic Compatibility), environmental and reliability testing, electric safety testing and performance testing, chemical and material testing, acoustic testing and so on.

ATS is dedicated to research on technical regulation, standards and testing technology, and provide lab consulting and engineering, testing technology training.

At same time, ATS sells and integrates test instruments and systems such as EMC testing equipments and systems, environmental and reliability testing equipments, chemical and material testing equipments etc.

ATS cooperate with different test equipment manufactures in many fields, so as to provide professional and cost-effective lab construction solutions according to difference requirements, and assure the test lab can meet the requirements of ISO/IEC 17025 and related test standards.

ATS is the agent of various famous EMC instruments and software manufactures, and has an international know-how EMC expert team with more than 20 years EMC standardization and testing experience. ATS has powerful capability of system integration and can provide turn-key EMC project service.

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Auden Techno. Corp.
耀登科技股份有限公司

Booth No.: 122



从 1981 年起,耀登科技专注于无线射频的研发设计与制造。持续致力于无线通信的天线效能技术与客制化设计与制造能力。产品应用范畴涵盖行动通讯、车用电子、网络通讯、数字家庭与工业应用,积极拓建专业测试与认证实验室,提供客户完整的开发前测试及开发后认证服务。

1998 年开始,代理瑞士 SPEAG 公司标准 SAR 测试设备。CTIA 全(半)人体模型。

2008 年协助瑞士 ZMT 公司推出专业生物医疗电磁模拟仿真软件 S4L,涵盖:热治疗、热导融、梯度线圈设计、支架设计、脉冲序列等等。是现阶段全面和先进的磁模拟仿真软件。

2013 年开始,耀登和 SPEAG 致力无干扰光学近场 EMI 探棒研究,着重解决复杂电路 EMI 干扰及 MRI 环境下电磁干扰问题。

Since 1981 Auden Techno Corp. has been focusing its efforts on the R&D, design, and manufacturing of radio frequency technology. With a professional management team, strong research and development strength, and solid RF core ability, we have been carrying out various wireless application developments in the market for years. Our product application covers: mobile communications, automotive electronics, Internet communications, the digital family, and industrial applications.

In 1998, Auden started being distributor of standard SAR test system and CTIA full(half) human models which made by SPEAG (Schmid & Partner Engineering AG) in China Territory and Taiwan.

In 2008 Auden started to sell the Professional biomedical electromagnetic simulation software, Sim4Life, which was launched by ZMT company (Zurich MedTech AG), including simulation of Heat treatment, thermal conductivity, gradient coil design, support design, pulse sequence...etc. It has been the most comprehensive simulation software and professional medical electromagnetic material in recent years.

In 2013, furthermore, Auden provided more various product line in EMC/EMI measurements, Time Domain Sensor Probe (TDS) & ICEy, using the most advanced optical sensor technology, designed by SPEAG. TDS & ICEy are to help designers to improve interferences in electronic components and circuit boards and also to apply active near field EMI test. Both have become the unique optical sensor probe measurement systems in the industry.

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Beijing Hengwei Yixun Technology Co., Ltd.

北京恒威仪讯科技发展有限公司

Booth No.: 111

北京恒威仪讯科技发展有限公司自 2000 年成立至今一直从事 EMI 电磁干扰测量接收机的生产及新品的开发。现有产品（电磁干扰测量接收机；人工电源网络；天线；发射机；接收机；放大器；屏蔽箱；电磁屏蔽室；6 米骚扰功率自动测试架；三维天线；手持式笔式电场磁场探头；频率从 5HZ----40GHZ)国际标准，国标及军标。公司从事高灵敏度的接收测试与测量及干扰测量及系统的开发与研制。提供 EMC 的解决方案，及诊断系统。

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Beijing Kehuan Century EMC Technology Co., Ltd.

北京科环世纪电磁兼容技术有限责任公司

Booth No.: 330

北京科环世纪电磁兼容技术有限责任公司是一家专业生产电磁干扰（EMI）测试接收机的厂家。公司拥有一批在中高频领域有着几十年经验的出色工程师，技术实力在全国同行业内属优秀水平。产品性能稳定，质量优越，现已在国内众多大中型企业中得到良好评价，公司本着产品是生命，质量是灵魂的理念，积极开展质量管理，严格要求，对生产工序的各个环节进行把关，我公司每出厂一台接收机都要经过国家权威计量机构校准，完全符合标准后才可出厂。

目前大部分电气产品都要经过 EMC 的测试，才能出口世界各地。随着新产品更新速度的提高，测试的需求也越大。这时候如果您有一套测试系统，就能使贵公司把握先机，在尽可能短的时间内使自己的新产品达到各项要求。这样既节约成本，也缩短了研发周期，即而提高了公司市场竞争力。

而我公司是一家专业生产的 EMI 测试系统的厂家，可以帮助您建立专业的 EMI 测试系统，为您提供优质的售前、售中、售后技术服务，让您及时拥有先进、可靠、精确的测试系统。

公司产品主要分为 9KHz—30MHz、9KHz—300MHz、9KHz—1GHz 三种系列，针对灯具、家用电器、电动工具等不同电气产品的传导干扰和辐射骚扰而设计。具体技术参数可联系我们，我公司将给您寄去您所需要的资料。

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Compliance Direction Systems Inc. (◆ SPONSOR ◆)

容向测试设备有限公司



Booth No.: 301

容向，专注于电磁兼容方向，提供 EMC 测试和调试的全套解决方案，包括国军标 GJB151A/152A、汽车电子、信息产品、医疗设备、工业设备、家电、照明等的电磁兼容测试系统。

公司拥有强大的技术团队，精通电磁兼容测试技术、设计技术和诊断技术。队伍中，既有业内知名的电磁兼容专家、CNAS（中国合格评定国家认可委）评审员、全国无线电干扰标准化委员会 I 分会委员、D 分会委员，还有多位经验丰富的售前售后工程师，在产品 EMC/EMI 设计领域具有非常丰富的理论基础和实践积累，能提供优质诚信可靠的技术支持和服务。

容向，专业的 EMC 系统集成商，具备集成全球各主要电磁兼容制造商设备的能力，具备丰富的集成经验，在深入了解客户现有以及潜在的需求的基础上，充分利用客户已有的设备资源，为客户量身定做可升级、最实用、最符合客户要求的各类 EMC 系统。能提供包括暗室和全套测试系统在内的电磁兼容实验室交钥匙工程，覆盖军标、汽车电子、家电、工业、医疗、信息技术、照明等各个行业，既能提供高性能的全兼容测试系统，也能提供低成本的预兼容测试系统。

容向，引导着全球电磁兼容设计和诊断技术，提供 IC—PCB—整机—系统的电磁干扰诊断系统，能帮助硬件工程师和 EMC 工程师解决电路设计以及系统互联中的电磁兼容问题，使他们的产品及早通过电磁兼容测试，加快产品上市时间。

容向公司在 2012 年投资建设检测实验室，为中国合格评定国家认可委认可实验室（注册号：CNASL7009）和 FCC 注册实验室（注册号：758040），拥有 2 个电波暗室、多个高性能屏蔽室、装备各类先进的 EMC 检测设备多达 120 台套、可依据 IEC、CISPR、EN、GB、ISO、GJB 等电磁兼容标准对包括军标在内的各类产品进行 EMC 测试。实验室出具的检验报告可以与 CNAS 签署 ILAC-MRA 国际互认协议的英国 UKAS、美国 ANSI、美国消费者委员会（CPSC）、美国 UL、美国 FCC、加拿大 IC、挪威 NEMKO、德国 TUV、新加坡 SPRING、等 40 多个国家与地区的实验室互认。实验室被认可的检测范围涉及汽车电子、电工、音视频、机电、电子电器、IT、医疗、电力设备等 20 类产品。

容向，将以最诚信的经营、最先进的技术、最专业的经验、最优质的服务，服务新老用户，谋求共同发展！

Direct to EM Compliance, manufacturer's representative on EMC testing & developing systems in China, providing "one stop EMC Solution" to the defense, telecommunication, automotive, consumer electronic, power supply, and universities.

CDSI, has and continues to serve the Chinese market with market leading products and leading edge technology. Our Goal is to provide the quality of product knowledge, support and after sales service expected from manufacturers. We have several rep offices in major cities of China include Beijing, Shanghai, Chengdu, Shenzhen, Hong Kong. We have a technical support centre in Nanjing, a local EMC Engineers team with extensive EMC testing and service experience for product support, engineering service and technical consultation.

We built our own CNAS (IEC 17025) accredited EMC testing laboratories in Nanjing in 2012, with standard 966 Chamber, 864 shielding room, test capability covers Automotive ESA (CISPR 25, ISO 10605, ISO 11452-2/4/5), all civil standards (CISPR 11/13/14/15/22/24, IEC 61000-4-2/3/4/5/6/8/10/11/13/29, IEC 61000-3-2/3, etc).

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CST – Computer Simulation Technology) (◆SPONSOR◆)



Booth No.: 205

CST develops and markets high performance EM field simulation software. Its products allow you to characterize, design and optimize electromagnetic devices before going into the lab or measurement chamber. This can help save substantial costs especially for new or cutting edge products, reduce design risk, and improve overall performance and profitability. CST EMC STUDIO enables the fast and accurate electromagnetic simulation of high frequency devices and the analysis of emissions or susceptibility of electromagnetic systems (including cables) in the time and frequency domain. CST's customers operate in industries as diverse as Telecommunications, Defense, Automotive, Electronics, and Medical Equipment.

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EG (Shanghai) commercial Co., Ltd.

依技（上海）商贸有限公司

Booth No.: 305

依技上海提供美国 Vanguard 电磁屏蔽胶条产品和丹麦 PCS 电磁屏蔽视窗产品在中国市场的推广，技术支持，销售相关服务。

EG Electronics representing below selected EMC solution suppliers here in China.

Vanguard: Vanguard Products Corporation is a full service manufacturing and engineering company providing industry with the highest quality elastomeric goods available. With our in-house compounding and mixing, our focus is on high performance elastomers such as silicone, fluorosilicone, fluorocarbon (Viton®, Fluorel®, etc.), EPDM, nitrile (Buna-N), and chloroprene (Neoprene®) in both sponge and dense elastomer forms for sealing, fluid transfer, shock absorption, heat transfer, and EMI/RFI shielding applications. Standard and custom products are available along with custom finishing services.

PSC: 'Perceive Solve Create' is our mantra and it permeates the way we work. Together with our clients we enter into close collaboration on the development of unique EMC display window solutions. We apply our in-depth knowledge regarding materials, design, durability, readability, and regulation requirements. In that way we create the optimal solution tailored to the specific application.

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EMC Technology Ltd.

北京艾姆克科技有限公司

Booth No.: 117

北京艾姆克科技有限公司.致力于为用户提供电磁兼容的全套解决方案, 始终把握电磁兼容的最新技术, 提供电子产品的电磁兼容设计、分析、测试及安装服务。电磁兼容在电子产品的生命周期中占有越来越重的地位, 然而电磁兼容的设计、分析、测试和管理却十分复杂。因此, 综合应用各种手段进行设计和分析非常重要。我们的目标是高品质的电子产品与系统设计和测试提供全套的解决方案。-精雕细琢品质卓越”是我公司的经营理念。

公司进驻市场多年来, 凭借良好的信誉、性能卓越的产品、优质的售后服务赢得了广大中国用户的信任。迄今为止, 在航空、航天、信息产业、兵器产业、船舶产业、高校、科学院、邮电通讯以及大量的本地民营企业、合资公司、工厂、研究所等等众多领域的客户都在使用我们的产品, 并取得了非常好的效果。

EMC 公司的使命: -精雕细琢品质卓越”, 为用户提供顾问式服务。引领电磁兼容技术的推广及发展。

EMC Technology Ltd.is committed to providing complete EMC solutions, including electromagnetic compatibility of electronic product design, analysis, testing and installation services, and always grasps the latest EMC technology. Electromagnetic compatibility has an increasingly important role in the life cycle of electronic products, however, EMC design, analysis, testing and managing are very complex. Therefore, the comprehensive EMC design and analysis are of vital importance. Our goal is to provide complete solutions for high quality electronic products, systems design and EMC test. "The uncompromising attention to detail quality of excellence" is our company's business philosophy.

The company has entered the market for many years, and has earned a good reputation in China with high quality products, excellent after-sales service. So far, our products has been utilized in aviation, aerospace, information industry, the weapons industry, shipbuilding industry, universities, academy of sciences, post and telecommunications, as well as a large number of local private enterprises, joint venture companies, factories, research institutes and so on many of its clients.

The company's goal:

Adhere to the philosophy "the uncompromising attention to detail quality of excellence", provide advisory services for users, and lead the development of electromagnetic compatible technology.

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ETS-LINDGREN Inc..

北京凌昆电磁技术有限公司

Booth No.: 316



ETS-Lindgren 是纽约证交所的上市公司 ESCO (股票代码 ESE) 的子公司, 是电磁、射频、声学检测及测试部件和系统的企业, 总部位于美国德州。北京凌昆电磁技术有限公司是 ETS-Lindgren 在中国的全资子公司。致力于将 ETS-Lindgren 的管理和技术与本地的资源相结合, 在中国及亚洲提供优质的电磁兼容产品和对客户直接的技术服务。

ETS-Lindgren 的产品包括:

- ▶ 各类 EMC 测试暗室及系统
- ▶ 天线测量暗室及系统
- ▶ 满足 CTIA 认证的 OTA SISO 测试暗室及系统

- ▶ 满足 CTIA 认证的 MIMO 测试暗室及系统
- ▶ 用于研发和快速测试的预测试系统
- ▶ 各类 EMC 测试天线、探头、LISN、
- ▶ 屏蔽箱、屏蔽室

作为 EMI/RFI/EMC 测试和测量设备供货商，ETS-Lindgren 提供一站式采购服务。ETS-Lindgren 已在中国建造 300 多个各类暗室。中国（北京）公司现有职工 120 多人，工厂 3000 余平米。在北京、上海及深圳都有办公室为客户提供售前和售后服务。

ETS-LINDGREN is a subsidiary of ESCO Technologies Corporation; ESCO is a New York Stock Exchange listed company (symbol ESE). ETS-Lindgren is an innovator of systems and components for the detection, measurement and management of electromagnetic, magnetic, and acoustic energy, headquartered in Texas US. ETS-Lindgren launched Beijing Lindgren E.M Technology Co. Ltd. (ETS-Lindgren China). As wholly-owned subsidiary of ETS-Lindgren, the companies are contributed to providing EMC products of high-quality and offering direct technical service in China and Asia by combining ETS-Lindgren's management and technology with local resources.

We design, manufacture, and provide:

RF Isolated Environments for Electromagnetic Compliance (EMC) Measurement and Testing System

Antenna measurementsystem

OTASISOtestchamberandsystem with CTIA certification

MIMO testchamberandsystem with CTIA certification

Pre-testingsystemforrapiddevelopmentandtesting

Testing antenna, probe and LISN

Shielding Box and Shielding room

As a leading EMI/RFI/EMC test and measurement equipment supplier, ETS-Lindgren provides one-stop shopping services that a supplier take responsibility for all the products and service. In China, ETS-LindgrenChina has provided and installed over 300 anechoic chamber.

ETS-Lindgren China (at Beijing) possesses 120 employees and a factory of over 3000 m². The Beijing, Shanghai and Shenzhen office providepre-salesandafter-sales servicetocustomers.

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FANG GUANG Certification&Inspection Co.,Ltd

方圆广电检测检测股份有限公司



Booth No.: 321

方圆广电检测检测股份有限公司（简称“方广检测”）是由方圆认证和广电计量等行业知名认证检测机构合资创建的股份制公司，前身为广电计量安全检测与认证中心。

在广州、天津和无锡建立了 3 大检测基地，现有检测基地场地总面积约 5000 平方米，设有环境实验室、电焊机实验室、电气附件实验室、电动工具实验室、材料实验室、光学实验室、电子电器安规实验室等各类专业实验室，拥有积分球、灼热丝试验仪、防水试验设备、高低温试验箱、浪涌脉冲发生器、插头插座寿命试验机等一批高端仪器设备，可为客户提供优质、高效的技术保障服务。

服务范围：工业品、电子电器安规性能及电磁兼容检测；质量管理体系、环境管理体系、职业健康安全管理体系、信息技术服务管理体系、信息安全管理体系、能源管理体系、食品农产品管理体系认证、咨询、相关技术研究和服务；一般食品农产品认证、一般工业产品认证、一般服务认证。

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General Test Systems Inc.
深圳市通用测试系统有限公司



Booth No.: 312

通用测试聚焦手机、可穿戴设备、无线路由、专用导航、卫星通信等移动通信终端辐射性能（OTA）测试系统的研发生产，提供覆盖认证/研发/产线等环节全系列多规格的电磁测量产品及完整测试解决方案。公司拥有多项领域内重要发明专利，是中国一家获得国际 CTIA 产品认证资质的企业，是 3GPP 4G LTE MIMO 测试标准贡献者，是国内 MIMO 测试规范起草单位。公司产品远销美国、加拿大、韩国、台湾，2014 年获全国创新创业大赛深圳赛区总决赛第一名。通用测试全资子公司深圳唯创微波技术有限公司专注于暗室及设备的吸波材料的研发与生产，为客户提供专业的吸波材料方案设计及产品定制服务，其自主研发的一系列吸波材料在行业内处于领先水平，产品已在多家 OTA 及北斗暗室得到应用。

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GuangZhou ShineTang Adhesive Products Co., Ltd.
广州市鑫樑胶粘制品有限公司



Booth No.: 109

广州市鑫樑胶粘制品有限公司（以下简称为“广州鑫樑”）成立于 2011 年，初期是以生产销售高品质胶粘材料为主，自 2012 年起，公司开始涉足屏蔽材料应用领域，并新增 1000 万人民币投资，新建全方位导电海绵和超薄导电布及相关产品的标准化生产线。

现在，鑫樑公司是一家以高端电磁屏蔽材料、高性能胶粘制品以及轻量化金属复合材料的研发、生产和销售为主的高新技术企业。专注于屏蔽材料和胶粘制品的研究和开发工作，通过不断的研发和创新，结合公司雄厚的技术开发及生产力量以及大学院校等科研机构的支持，现已形成了规格多样的导电海绵、导电薄膜、导电 PE、导电胶带、泡沫铁镍合金和多种泡沫金属合金材料等为主的产品系列。目前，我们的产品被广泛的应用于电磁屏蔽、工业及民用过滤、电池电极、吸能降磁、催化剂载体、建筑装饰、贵金属回收等领域和行业。

Founded in 2011, Guangzhou ShineTang Co., Ltd. (hereafter as ShineTang) is a high-tech company which produce adhesive at the beginning. Since the year of 2012, we involved into electronic shielding material industry. After our research and support by local government and university, we finally invested production line which can produce conductive sponge, cloth, PE etc.

Now the ShineTang company focuses on shielding material and high quality adhesive products' RD and manufacture. Our RD department will test new material, and our main products include Conductive Sponge, Conductive Film, Conductive non-woven fabrics, Conductive Tape, Fe-Ni foam, and other alloy foams etc.

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Hanwa Electronic Ind. Co., Ltd
广州市鑫樑胶粘制品有限公司

Booth No.: 336

Hanwa Electronic Ind. Co., Ltd. is a world leader in providing customers with good quality and service of ESD Testers over 30 years throughout the world. Products include Wafer ESD, CDM, TLP and Latch-up Tester. Our business has not

only ESD measurement equipments but also Static Image system product and PV product. We ensure that our products are able to solve all electrostatic problems for you. We welcome ESD test demonstration for your own samples anytime.

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Huawei Technologies Co., Ltd. (◆ SPONSOR ◆)

华为技术有限公司



Booth No.: 115

HUAWEI is a leading global ICT solutions provider. Through our dedication to customer-centric innovation and strong partnerships, we have established end-to-end capabilities and strengths across the carrier network, enterprise, consumer, and cloud computing fields. We are committed to creating maximum value for telecom carriers, enterprises and consumers by providing competitive ICT solutions and services. Our products and solutions have been deployed in over 140 countries, serving more than one third of the world's population.

HUAWEI's vision is to enrich life through communication. By leveraging our experience and expertise in the ICT sector, we help bridge the digital divide by providing opportunities to enjoy broadband services, regardless of geographic locations. Contributing to the sustainable development of society, the economy, and the environment, HUAWEI creates green solutions that enable customers to reduce power consumption, carbon emissions, and resource costs.

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IEEE EMC



Booth No.: 336

IEEE EMC Society is one of the 39 societies under IEEE, which is a recognized and respected technical professional association providing services in the field of electromagnetic compatibility engineering, technology, and innovation for the betterment of society and the preferred professional development source for our members. EMC society fosters the development and facilitates the exchange of scientific and technological knowledge in the discipline of electromagnetic environmental effects and electromagnetic compatibility, and promotes literary, educational and professional aspects thereof, which benefits both in the profession and humanity.

URL: <http://www.emcs.org>

JS Tonscend Corporation
深圳东昇射频技术有限公司



Booth No.: 328

Tonscend 东昇射频是一家无线通讯产品射频和电磁兼容测试系统解决方案专业集成商，公司的核心业务是为客户提供自动化的射频和电磁兼容测试系统，主要包含 Bluetooth、WIFI、GSM、GPRS、EGPRS、WCDMA、HSDPA、HSUPA、TD SCDMA、DECT、LTE TDD、LTE FDD、LTE Advance、中继器和小基站等无线产品自动化射频传导测试系统；杂散 RSE & CSE 测试系统；RE&CE、RS&CS、Audio Breakthrough 等电磁兼容测试系统以及基于专业实验室检测平台的智能化管理系统 SMP100。

我们自主研发的系统符合欧盟市场 R&TTE 指令 CE 认证、北美市场 FCC 认证、中国 SRRC 认证、日本市场 Telec 自动化测试要求。全自动化测试软件满足 BT&WIFI 最新标准 ETSI EN 300 328 V1.8.1/V1.9.1(2.4 GHz) 和 ETSI EN 301 893 V1.7.1/V1.8.1 (5 GHz)，以及对应的北美 FCC part15 C 和 FCC part15E（按新的 KDB 要求）；满足 2G 3G 4G 通讯产品标准 EN301 511,EN301 908-2,EN301 908-13（R8/R10），以及对应的北美 FCC part22/part24/part27 标准自动化测试和报告自动生成；自动化测试软件符合中国型号核准 SRRC 和日本 Telec 认证自动化测试和自动化报告生成。

我们围绕客户的需求持续创新，与合作伙伴开放合作，在无线通讯 RF 和 EMC 测试领域拥有完全的自主知识产权。我们致力于为客户提供具有竞争力射频与电磁兼容解决方案和服务，持续提升客户体验。我们拥有专业的技术服务团队为您提供咨询、培训、技术支持和售后服务，并提供完全本地化的售后支持，我们以“提高检测效率，降低无线测试领域检测成本，提高测试的可靠性和一致性！”为目标，致力于为客户创造大的价值。

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JS TOYO Corporation (shenzhen) Ltd.

东昇电磁兼容技术（深圳）有限公司



Booth No.: 310

JS Toyo 是一家专注于提供电磁兼容和射频测试解决方案的一站式服务中心。公司总部设在新加坡，她在中国的历史可以追溯到 2008 年，那时候主要的股东 JS Denki Pte Ltd (成立于 2002 年) 在深圳、华南地区、香港设立，提供广泛的电磁兼容产品从配件及测量仪表到复杂的测试系统（覆盖工业、消费电子、信息类、无线、汽车产品测试）。

JS Toyo 也提供完善的本地化咨询、安装、培训以及售后服务，凭借多年的电磁兼容测试系统设计经验，本公司已成功在整个亚洲完成多个项目。长串的客户名单从国家、私人测试实验室、生产企业，到学术机构证实了我司的实力。

JS Toyo strives to provide a one-stop service center for EMC and RF test solutions. The company is headquartered in Singapore, and its history in China dates back to 2008 when the parent shareholder, JS Denki Pte (first founded in 2002), set up the company in both Shenzhen, Southern China and Hong Kong, to provide a wide range of EMC products, from accessories and test equipment to complex test systems (ranging from consumer electronics, ITE, wireless and automotive testing).

JS Toyo also provides localized consultation, installation, training and aftersales services. With years of experience in EMC system design, the company has successfully completed many projects throughout Asia. Its long list of customers, ranging from national and private test laboratories and manufacturers, to academic institutions, attests to this.

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Keysight Technologies (NYSE: KEYS) (◆ SPONSOR ◆)



Booth No.: 320

Keysight is a global electronic measurement technology and market leader helping to transform its customers' measurement experience through innovations in wireless, modular, and software solutions. Keysight's electronic

measurement instruments, systems, software and services are used in the design, development, manufacture, installation, deployment and operation of electronic equipment. The business had revenues of \$2.9 billion in fiscal year 2015.

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KITAGAWA TECHNOLOGY (SHENZHEN) CO.,LTD.

北弘科技（深圳）有限公司

Booth No.: 121

北弘科技（深圳）有限公司是日本北川工业株式会社在华南地区的子公司。北川工业是一家成立 60 年的集研发、生产、销售为一体的跨国型企业。在中国，美国，德国，泰国，新加坡及香港，台湾地区都有分支机构，为全球客户提供产品和技术支持。

产品包括精密塑胶紧固件、电磁兼容产品、导热材料及防振材料等。其中电磁兼容产品的研发生产始于 1984 年，产品包括接地强化、滤波/吸波、屏蔽等，在新能源，工业设备、汽车、生物技术、通信、办公设备、医疗等行业中有广泛的应用。

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Mitsubishi Electric Engineering Co., Ltd.

三菱电机工程技术株式会社



Booth No.: 120

- Support of EMC countermeasures
- Front-loading of EMC design (low noise PWB design)
- On-site testing of EMC

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Rflight Communication Electronic Co., Ltd.

南京纳特通信电子有限公司



Booth No.: 103

南京纳特通信电子有限公司成立于 2004 年，是一家专业从事无线通信、国防工业、电磁兼容、医疗设备 & 工业应用等领域射频功放和系统产品研发、生产、销售和服务的高科技企业。

公司主要产品包括各类宽频、窄频大功率射频放大器，专有频率定制放大器以及子系统，互调测试系统和无源综合测试系统等。我们的功放产品频率跨度为 4kHz-45GHz，功率范围为 1W-100KW。应用领域覆盖电磁兼容、军工、通信、汽车、医疗、科学研究、空间探索等；可满足的测试标准有 GJB151B-2013（200V/m）

GJB1389A-2005（强射频、辐射危害等），RTCADO-160G(G 类和 L 类)，YY0505-2012，GB/T17626.3-2006，GB/T17626.6-2008 等，也能满足汽车企业要求的 600V/m 雷达波抗扰测试。

公司秉承“精工精品、卓越”的理念，以“为客户创造价值”为工作准则，奔跑的纳特将立志成为优秀的功放产品供应商！

Founded in the beginning of 2004, Rflight Communication Electronic Co., Ltd. is a high technology company dedicated to R&D, manufacture, sales and service of RF microwave high power solid state amplifiers and PIM testing system products in the fields of wireless communication, defense, EMC, medical and industrial applications.

Our main products are various power amplifiers of wideband/narrowband high power amplifiers, dedicated frequency customized amplifiers & sub-systems as well as PIM test systems. The product frequency span from 4KHz to 45GHz, power rate from 1W to 100KW. Application includes EMC, military, telecom., automobile, medical, scientific research, space exploring etc., meeting various testing standards: GJB 151B-2013(200V/m), GJB 1389A-2005 (Strong RF, radiation hazards), RTCA DO-160G (G class & L class), YY 0505-2012, GB/T 17626.3-2006, GB/T 17626.6-2008 etc, also meeting automobile industry 600 V/m radar wave Immunity test.

“To be the best and to be the number one” is our guideline to do business. We’re resolved to set-up the benchmark for power amplifier industry.

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Rohde & Schwarz(China)Technology Co.,Ltd.

罗德与施瓦茨（中国）科技有限公司



Booth No.: 201

罗德与施瓦茨公司作为一家独立的国际性电子公司，是测试与测量，广播电视与媒体，安全通信，以及无线电监测与定位领域的解决方案提供商。公司成立于 1933 年，销售与服务网络遍及全球 70 多个国家和地区。

The Rohde&Schwarz electronics group offers innovative solutions in the following business fields: test and measurement, broadcast and media, secure communications, cybersecurity, radiomonitoring and radiolocation. Founded more than 80 years ago, this independent company has an extensive sales and service network and is present in more than 70 countries.

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SAFETY & EMC Magazine.

安全与电磁兼容

SAFETY & EMC magazine started the first publication from twenty one 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. 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.

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Shaanxi Hitech Electronic Co., Ltd.
陕西海泰电子有限责任公司



Booth No.: 207

陕西海泰电子有限责任公司（简称“海泰电子”）成立于 1997 年，总部设在西安，在香港、北京、上海、成都、武汉建有分支机构。现有员工总数 220 余人，其中近 70% 为专业技术人员，分别从事电磁兼容、自动化测试系统集成和虚拟仪器技术研究。

作为电磁兼容行业的全面供应商，海泰电子在产品的设计论证阶段提供系统内、系统间电磁兼容预测分析软件以及相应的电磁兼容数据库软件；在产品试验验证与测试阶段提供军用设备级、军用系统级以及民用十大类电磁兼容自动测试系统；在产品故障整改阶段提供专业的电磁兼容测试与整改服务、咨询服务以及相关产品。

Shaanxi Hitech Electronic Co., Ltd., which was set up in 1997 and invested jointly by CSIC Technology Investment and Development Co., Ltd. and Xi'an Haitai Keji Co., Ltd., is a hi-tech enterprise. The company has also established its branches in cities like Hong Kong, Beijing, Shanghai, Chengdu and Wuhan.

Hitech Electronic has about over 220 staff, and near 70% of professional technicians are engaged in the technical research and product development in three business respectively of Electromagnetic Compatibility (EMC), ATS (Automatic Test System) integration and Virtual Instrument. Hitech Electronic has the approval from the Ministry of Personnel and set up the “Postdoctoral Scientific Research Workstation”. Hitech Electronic has won twice of National Science and Technology Award, more than 10 items of Provincial Science and Technology Award. It has more than 70 items of patents and software copyrights and other intellectual property rights.

Hitech Electronic is as an EMC industry comprehensive supplier, in the production of design and demonstration stage provide the EMC Designer, the EMC Evaluator and the corresponding electromagnetic compatibility database management software EMCDatabase. In the production of experimental verification and testing stage, it can provide military standard device-level, military standard system-level and 10 classes of civil EMC automatic test system. In the production of fault rectification stage which can provide professional EMC test and rectification services, technical advice services, and relative products. To the present day, Hitech Electronic has already successfully developed hundreds of sets of ATS for scientific research institutions and enterprises in aviation, aerospace, vessel, electronic and telecom field, which helps Hitech gained a high reputation.

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Shanghai Jiyuan International Trading Co., Ltd
上海吉渊国际贸易有限公司

Booth No.: 329

主营产品有 EMC 电磁屏蔽材料用超薄涤纶湿式无纺布、涤纶纺粘长纤维无纺布；韩国进口导电布、导电胶带；进口导热材料。

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Shanghai Lioncel Electronics Co., Ltd
上海凌世电子有限公司



Booth No.: 105

上海凌世电子有限公司多年来致力于电磁兼容测试技术研究、抗扰度测试产品研发、制造、电磁兼容测试系统集成销售，目前公司不但能够自主提供全套国内技术先进的 IEC61000-4 电磁兼容标准族通用抗扰度测试产品，更针对汽车电器、电力仪表、低压电器提供专业的测试仪器。我司还自主研发制造符合电磁兼容试验要求的屏蔽室、电波暗室等 EMC 测试环境产品，公司拥有包括暗室、接收机、完整抗扰度测试系统在内的试验室，可提供检测与设计整改服务，更值得一提的是，凌世电子是国内有能力专业提供电磁兼容试验室全程设计及监理服务的技术服务商。

Shanghai Lioncel Electronics Co., Ltd is a leading Hi-tech company dedicated to the research & development of EMC test technology.

Now we can provide not only the whole series of general immunity test products fulfill IEC61000-4 standard, but also the special test instrument and system for automotive electronic appliance, electric-power instrument, healthcare products and low voltage electronic appliance. We supply GTEM chamber, shield room and anechoic chamber. Answering for the needs of our customers, we can provide the total EMS & EMI test solution including not only supply products from a single test instrument to a whole test system composed by products of ourselves and agent in home and abroad, but also give consultation, services and training support.

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Shanghai Norco Metal Materials Co.,Ltd.
上海诺可金属材料有限公司

Booth No.: 108

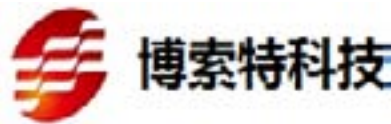
上海诺可金属材料有限公司是专业进口和销售金属及金属粉末的企业，多年来通过向国内外客户提供优质的产品和服务在各行业内赢得了良好的口碑。

我们的产品广泛用于航空航天、清洁能源、医疗器械、粉末冶金、注射成型、电磁屏蔽、电子电镀、导电涂料、硬质合金、电工合金、金刚石工具等行业，并与国内多家大型企业有长期的合作的关系。

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ShenZhen Bost Technology Co.,Ltd.
深圳市博索特科技有限公司

Booth No.: 335



公司主要为消费类电子产品、汽车类电子产品、军工类电子产品的制造和检验提供好的设备。

我们的测试系统有：

民品的电磁兼容测试系统（包含空间辐射骚扰 RE、传导骚扰 CE、功率辐射骚扰 PFP 等 EMI 测试系统，以及空间辐射抗干扰度 RS、传导辐射抗干扰度 CS、音频突破 ABT 等 EMS 测试系统）。汽车电子的电磁兼容测试系统（包含整车或零配件 EMI 和 EMS 系统，包括 BCI、TEM Cell、GTEM、RVC 等，GM、Ford、Chrysler 等厂家标准）；无线射频测试系统（包含满足 2G、3G、4G 无线终端，WiFi，BT 法规的测试系统），安规测试实验室等。

我们的服务有:

前期技术咨询服务, 实验室配置咨询服务, 实验室已有设备集成服务, 软、硬件技术培训, 实验室授权资质申请服务。

The company focuses on providing the best test equipments (including RF-MW test equipment, EMC test equipment, common test equipment).

Our test systems include:

Consumer electronics EMC test system (including EMI test system such as radiated emission(RE), conducted emission(CE), disturbance power(PFP) etc., and EMS test system such as radiated immunity(RS), conducted immunity(CS), audio breakthrough(ABT) etc.). Automotive electronics EMC test system (including vehicle and component EMI/EMS test system, such as BCI, TEM cell, GTEM, RVC etc. which comply with requirements of GM/Ford/Chrysler...), RF-MW test system (including Wi-Fi, BT, 2G/3G/4G mobile device test system), Safety test system etc.

Our services include:

Technical consultation, system configuration consultation, system integration consultation, technical training, test lab authorization application service.

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Shenzhen HFC Shielding Products Co., Ltd.

深圳市鸿富诚屏蔽材料有限公司



Booth No.: 118

鸿富诚成立于 2003 年, 位于深圳市宝安区福永镇第三工业区, 是一家致力于屏蔽材料、热传导材料、吸波材料以及磁性材料的研发、制造与销售一体化的知名企业。先后在重庆、苏州、成都建立生产工厂, 并在日本、美国、香港、台湾、昆山等处设立销售办事处。

自成立以来, 鸿富诚秉持“客户至上, 勇于突破, 共赢未来”的企业价值观, 在“专业、专心、专注”的经营理念指引下, 取得了众多品牌客户的深度信赖和认可。目前主要的合作对象有: 苹果、联想、富士康、日立、东芝、英业达等知名企业。

公司研发团队在深圳、番禺、中山、重庆、绵阳五大城市建立了 7 个研发实验室, 共取得 30 余项专利, 同时与哈尔滨工业大学、香港科技大学纳米研究中心、湖北化工研究院等知名高校保持长期技术合作关系。公司于 2010 年、2012 年先后推出国内导热垫片卷材智能化产线、国内 I/O 导电衬垫自动化生产线, 成为行业内智能化、自动化生产的推动者。

本公司先后通过 ISO9001/IECQ-QC08000/ISO14001/OHSAS18001 等一系列体系认证。产品均通过 UL94V0 认证, 并符合 RoHS/无卤素等环保要求, 我们始终向着产品零缺陷的标准前进。

我们致力于: 成为优秀的 EMI/EMC 及热界面材料制造商!

Our products are used in a wide variety of electronic applications which require EMI, thermal and absorber functions. Products such as laptops, TV, set top boxes, desktops, mobile phones and telecommunications equipments are greatly improved by our unsurpassed quality products. Some of the world's biggest electronic manufacturers rely on us as their primary suppliers for EMI, thermal and absorber solutions, such as APPLE, LENOVO, FOXCONN, HITACHI, TOSHIBA and INVENTEC etc. For the purpose of long term and deep cooperation with such clients, we set sales offices in USA, JAPAN, HK, TAIWAN and KUNSHAN. Every order placed, big or small, is very important to us and we strive to make certain that the customer is satisfied and willing to choose us for all your EMI, thermal and absorber needs in future. We are committed to be an excellent EMI/EMC and thermal conductive material manufacturer and solution supplier.

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Shenzhen Zhiyong Electronics Co., Ltd.
深圳市知用电子有限公司

CYBERTEK

Booth No.: 107

深圳市知用电子有限公司（CYBERTEK）是一家专注于专业测试仪器领域的高科技公司。公司开发的高性能高频电流/电压探头和传感器、全数字化电磁兼容接收机及专业测量附件等产品系列，广泛用于电子产品研发生产的各领域，性能全面达到世界先进水平。目前是国内一家掌握高频电流探头核心科技的生产厂家。公司创始人及其开发团队在精密传感器、数字信号处理、射频技术等方面经过长期的技术积累，拥有相关的知识产权和专利、以及核心专业技术能力。公司的研发生产体系在 ISO9000 质量管理体系的管理下，产品通过了各种认证如 CE 和各国国家权威计量单位的计量。通过提供各类高性能的测量和测试解决方案，为我们的客户快速研发生产高可靠高性能低成本的产品提供强有力的保障，从而使客户实现产品与服务的增值。

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Suzhou 3ctest Electronic Co., Ltd. (◆SPONSOR◆)

3ctest
Quality & Service for EMC

Booth No.: 101

3ctest is located in the National development zone—Suzhou High-tech district, a technology-intensive enterprise combining scientific research, design, manufacture, sales and service.

The company is divided into Lightning protection effect test equipments, electromagnetic compatibility (EMC) test equipments and laboratory system integration of the three major business subjects. At present, we have offices in Beijing, Shenzhen, Chengdu, the headquarters in Suzhou has HV and EMC lab. We actively provide customers with professional and meticulous service, and strive to build first-class products, creating world brand.

As a high-tech company, our ambition is to become a respected service company with professional testing technology. Because of devotion, we are happy and feel not tired. Because of innovation, we have motivation to go forward. Because of competition, we are growing up. Because of your support and trust, our smiles are keeping.

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TDK Corporation EMC & RF Engineering Dept.
TDK 中国电波部

TDK

Booth No.: 306

TDK 公司是世界优秀的 EMC 产品和服务的主要供应商，在 EMC 领域有着近 70 多年的历史，公司自 1935 年成立以来，就开始提供电磁（铁氧体）产品，现在，TDK 的产品已经扩展到，包括铁氧体产品在内的所有 EMC 产品和系统，例如：

1. 铁氧体磁芯、磁珠（片型及引线型）
2. 晶片引线（晶片管脚）（单个的与阵列的）
3. 高电压、大电流电容器
4. 电感器（片型及引线型、单个的与阵列的）
5. 噪声滤波器（共模扼流圈、钳位滤波器）
6. 变阻器（片型与阵列型等）
7. 噪声抑制片
8. 电波暗室（EMC 暗室、天线暗室）
9. 电磁干扰/电磁兼容测试系统及其他大型系统
10. 电磁兼容测试业务

TDK 作为 EMC 整套解决方案的供应商，能够提供各种 EMC 产品和系统服务，这归功于 TDK 不仅专注于材料的研究和开发，同时并致力于部件和系统的设计与生产。

TDK 已在中国建立了超过 16 个销售处和生产基地，销售网络遍及全国，致力于向中国用户提供优质、高可靠性的 EMC 部件、电波暗室、EMI/EMS 测试系统和 EMC 测试服务。

TDK is world leading company of EMC related products and the service since more than 70 years ago. TDK has been involved electromagnetic (ferrite) products when we established the company in 1935; we have extended its products not only single ferrite products but also various kinds of EMC products, anechoic chamber and test system such as:

1. Ferrite cores, beads (chip and leaded components)
2. Chip caps (single and array type etc)
3. High voltage, high current capacitors
4. Inductors (chip and leaded type, signal and power use)
5. Noise filters (common mode choke, clamp filters etc)
6. Varistors (chip and array type etc)
7. Flexield (noise suppression sheet)
8. Anechoic Chambers (EMC chambers, Antenna chambers)
9. EMI/EMS Test systems and other large test systems
10. EMC Test services

TDK is acting as a "Total EMC Solutions" provider, with all these EMC products & EMC Test systems because TDK is deeply involved from the research and development of low materials to the design and production of the components and the systems.

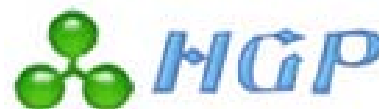
TDK also has established the sales network & production sites in China more than 16 locations, so please contact following offices to get EMC Components, anechoic chamber, and EMI/EMS test system & EMC test services.

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Wuzhou HGP Advanced Materials Technology Corp., Ltd.

梧州三和新材料科技有限公司

Booth No.: 331



梧州三和新材料科技有限公司（HGP）成立于 2003 年，位于广西梧州市工业园区内，是一家生产用于高新电子产品的导电、导热、电磁屏蔽、电极载体等先进新材料的高新技术企业。

公司产品专注于高品质导电海绵、导电布、导电无纺布、导热膜、发泡镍及其他发泡多孔金属等先进新材料。

公司技术和产品的发展紧紧围绕亚微米石墨（烯）、卷对卷（RTR）真空镀、RTR 电沉积纳米晶金属薄膜技术等核心技术，在上述技术领域达到和保持世界水平。

除了电子产品 EMI 材料和电池发泡镍外，公司未来产业方向定位于将核心技术向纳米薄膜材料和纳米晶金属复合材料发展，产品将应用在 OLED 照明及显示屏以及大尺寸触摸屏和柔性电致变色膜等。

公司占地 60 亩，建有厂房约 2 万平方米，基础电力 5000 千瓦，拥有员工 170 余人，拥有主要设备为 1100mm 宽幅、卷材直径 900mm 的大型真空镀膜机组 5 套、电沉积生产线 65 条、连续卷材热处理氧化炉 4 条，对连续非金属卷材进行导电及后处理能力可达到月产 25 万平方米。

公司 2005 年通过并一直持续维持 ISO9001 质量管理体系和 ISO14001 环境管理体系的认证。公司于 2015 年底在深圳前海股权交易中心挂牌，计划 2016 年完成股份制改造，2017 年实现新三板上市，2019 年实现创业板上市。

Wuzhou HGP Advanced Material Technology Corp., Ltd., which was founded in 2003, located in the industrial zone, Wuzhou City, Guangxi Province, is a high-tech enterprise of manufacturing advanced materials, which can be applied to electric conduction, heat conduction, electromagnetic shielding, electrode carrier of high-tech electronic products.

The company's products focus on high-quality advanced new materials such as conductive sponge, conductive fabric, conductive non-woven fabric, heat conducting film, nickel foam and other porous foamed metal etc..

The development of the company's technology and products are closely around the submicron graphite (ENE), roll to roll (RTR) vacuum plating, RTR electric deposition nanocrystalline metal film technology and other core technologies, which has achieved and maintained the world's leading level in the above fields.

In addition to the EMI materials applied to the electronic products and nickel foam for battery, the future industrial orientation of the company is located in the core technology to the development of nano film materials and nanocrystalline metal composite materials, which will be applied in the OLED lighting and display screen, and large size touch screen and flexible electrochromic film, etc..

Company covers an area of 60 acres, built a plant of about 2 million square meters with power base 5000 kilowatts, has a staff of more than 170 people. As major equipments, we own 5 sets of large vacuum coating unit that producing 1100mm width and 900mm diameter coiled material, 65 electro-deposition lines, 4 oxidation reduction furnaces for heat processing continuous coil. The capacity of conducting and post-processing continuous non metal coil can be up to 250,000 square meters per month.

The company had been passed in 2005 and continues to maintain the ISO9001 quality management system and ISO14001 environment management system certification.

The company listed in Qianhai Shenzhen equity trading center at the end of 2015, and we plan to complete the shareholding reform in 2016, to achieve the new third board (NEEQ) listed in 2017 and the GEM board listed in 2019.

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Würth Elektronik eiSos GmbH & Co. KG

伍尔特电子集团有限公司

Booth No.: 313



伍尔特电子集团有限公司为电子行业提供电子和机电元件，隶属全球紧固件制造商伍尔特集团（Würth Group）。公司拥有 6100 名员工，并在 2014 年创造出四亿欧元的销售额。伍尔特电子拥有宽泛的产品线，包括 EMC 元件、电容器、电感器、射频电感器、LTCC 元件、变压器、线路保护元件、电源模块、LEDs、连接器、开关、电源元件和装配技术。

作为欧洲大的无源元器件生产商，伍尔特电子可以提供如下的优质服务来使自己有别于其他竞争对手：

- ▶ 所有目录产品备有一定的现货
- ▶ 免费样品服务
- ▶ 24-48 小时样品交货

- ▶ 无最小起订量限制
- ▶ 技术销售团队及现场应用工程师的设计支持
- ▶ 配合所有优秀的 IC 生产商做的参考设计
- ▶ 设计套装样品永久免费补充
- ▶ 免费的 EMC 和电源设计研讨会
- ▶ 好用的选型软件工具

我们为客户提供的不仅仅是产品本身，还有我们的专业技术服务。我们的专业技术手册"Trilogy of Magnetics", "Abc of Capacitors", "Trilogy of Connectors" and "Simulation in LTspice IV"为专业人士及对此感兴趣的各界人士提供了以实用为出发点的专业概述。伍尔特电子直接销售业务遍及全球 40 个国家，13 家生产基地遍布全球所有重要市场，以保证产品可以迅速为全球客户供货。

伍尔特电子：远超您的期望！

Würth Elektronik eiSos GmbH & Co. KG is a manufacturer of electronic and electromechanical components for the electronics industry. Würth Elektronik eiSos is part of the Würth Group, the global market leader for fastener technology. The company employs currently 6,100 people and generated sales of 400 million Euro in 2014.

The Würth Elektronik eiSos product range covers EMC Components, Capacitors, Inductors, RF Inductors and LTCC Components, Transformers, Components for Circuit Protection, Power Modules, LEDs, Connectors, Switches, Power Elements in Press-fit Technology and Assembly Technique.

As one of Europe's largest manufacturer of passive components, Würth Elektronik eiSos sets itself apart from other component manufacturers in the following ways:

- ▶ All catalogue products are available from stock
- ▶ Free sample service
- ▶ Delivery of samples within 24-48 hrs
- ▶ No MOQ
- ▶ Design support from technical sales force and Field Application Engineers
- ▶ Reference designs with all leading IC manufacturers
- ▶ Design kits with free refills
- ▶ Free EMC and Power seminars
- ▶ Software tools for selection of components

In addition to components, Würth Elektronik eiSos also supplies engineers with expertise. The "Trilogy of Magnetics", "Abc of Capacitors", "Trilogy of Connectors" and "Simulation in LTspice IV" application manuals provide professionals and other interested parties with a compendium of practice-oriented expertise, which is unique of its kind. Würth Elektronik eiSos is active with direct sales in 40 countries worldwide. 13 manufacturing facilities located in all important markets worldwide guarantee the rapid delivery of components.

Würth Elektronik: more than you expect!

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XUTEC & PMM-NARDA

北京信测科技有限公司

Booth No.: 112



XUTEC is a company, who wants to—Bringing China the Right testing & measuring equipment! —

The head office is located in Beijing. In there we have our administration, sales team and service team. Through the branch offices in Guangzhou, Shenzhen, Hong Kong, Shanghai, Hangzhou, Xian, Chengdu and extensive sales-network, XUTEC cover every region of China, including Hong Kong and Macao, and reach every field as Metrology, Institute, Calibration house, Laboratory, Industry, Telecom, Power Company, Military applications and so on. We are cooperating with famous international manufacturers, and we introduce the well-known international EMC test equipment to Chinese customer.

XUTEC is not only selling EMC system in China, but also built up the Service Center for our international EMC equipment's' supplier, and provide the 'Local Service'. The big advantage to customers: Save Money, Save the most precious: time.

Every year we will hold at least twice technical seminars with different topics for the Chinese customers, for bring large new technical information to customers directly. There is an "Open Lab" free for customer use. All these ways will provide our customers the opportunity to know more to avoid expensive or cheap question to choose the Right test equipment.

Our vision is to become a customer trusted test solution provider.

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ANSYS

Booth No.: 333

作为全球工程仿真领域的领先企业，ANSYS 在众多产品的创造过程中都扮演着至关重要的角色。无论是火箭发射、飞机翱翔长空、汽车高速驰骋、电脑和移动设备的便捷使用、桥梁虹跨江河还是可穿戴产品的贴心使用，ANSYS 技术都尽显卓越。我们帮助全球创新性的企业推出投其所好的出色产品，通过业界性能良好、丰富的工程仿真软件产品组合帮助客户解决复杂的仿真难题，我们让工程产品充分发挥想象的力量。欢迎与我们全球 75 个战略部门的近 3000 名专业人士合作，共同在工程仿真和产品开发领域彰显非凡！

在中国，ANSYS 拥有北京/上海/深圳/成都四个分公司，两百余名员工，与我们的合作伙伴共同为中国制造业提供先进的仿真技术，通过仿真技术支撑中国 2025。欲了解更多详情，敬请访问 www.ansys.com.cn。

ANSYS 在主要社交媒体上也保持积极宣传态势。在中国，敬请关注 ANSYS 官方微信公众账号：[ansys-china](https://www.ansys.com.cn/ansys-china)；ANSYS 新浪微博：[@ANSYS 中国](https://www.ansys.com.cn)。

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益技术是国内较早进行近场多探头测量系统技术研究的公司，拥有清华博士、北邮、西电等多名高级人才组成的专家组，8 年来一直专注于该领域的技术创新和市场拓展，服务于国内大部分天线厂商。

本公司吸收国内外先进技术，先后推出了 SY-16M、SY-16、SY-24、SY-24L、SY-64、SY-128 等天线测量系统，技术达到国际一流水准，并在全球范围内率先实现实时有源 TRP、TIS 测量。

我们以“尊重客户、信任客户、服务客户”的理念，为客户提供“专一、专业、专注”的服务，真正实现我们的宗旨——为科技带来创新、为企业带来收益！

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URL: www.sunyield.com

Zhejiang University**浙江大学电磁环境与电磁兼容研究中心**

Center for Electromagnetic Environment and EMC was founded at Zhejiang University and aims to devote the research and development in the fields of: IC and package EMC, system level EMC, antenna research and nano material for EMC. The center strengthens its core capabilities through dedicated R&D, alliance and collaborations with leading research organizations and universities world-wide. It is also committed to collaborate and perform value-added R&D with international industrial companies.

Contact person: Professor Li ErPing

Email: liep@zju.edu.cn

URL: www.rfne.zju.edu.cn



ANSI WORKSHOP

Emission Measurements (2014 Edition) of ANSI C63.4) and Time Domain (TD) Applications (draft ANSI C63.25)

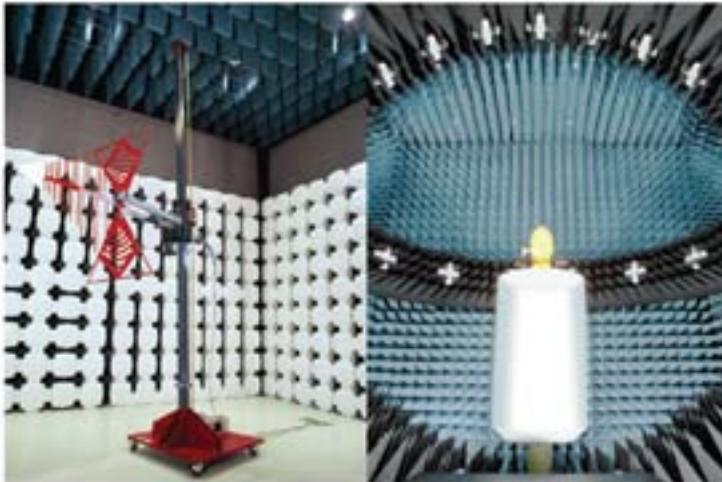
This combined workshop is presented in two parts during one full day. Topics covered include: (1) review of the 2014 edition of ANSI C63.4 and (2) preview of the draft ANSI C63.25 site validation document and application of Time Domain (TD) measurements for test site validation and antenna calibration. These workshops are designed to increase your understanding of the new C63.4 standard which will be the only edition that can be used in FCC compliance measurements effective 14 July 2016 and the TD approach. For the C63.4 workshop, there will be an analysis of the test site validation in Annex D including using the CISPR SVSWR method above 1 GHz, requirements for hybrid antenna use, test setup requirements and many other changes from the previous edition in 2009. As time permits, CISPR 32 will be discussed. Application of time domain methods to validating test sites will also be presented along with a demonstration using a Keysight PNA microwave network analyzer. If time permits, attendees will get a chance to apply what they learned via problem solving and/or participating in the real-time time domain demonstration.

(Visit www.c63.org for more information)

<p>In the C63.4 workshop, you will learn changes between the 2009 and 2014 editions in these areas:</p> <ul style="list-style-type: none"> RF emission measurement procedures above 1 GHz Regulatory implications Test facility changes and hybrid antenna validation Handling tablet PCs, rack-mounted equipment and visual displays The basic information contained in the CISPR 32 (multimedia, IT and receivers) testing approach <p>In the Time Domain (C63.25 draft) workshop, you will learn:</p> <ul style="list-style-type: none"> Application for site validation Application for antenna calibration Updates on the draft standard <p>Support material provided</p> <ul style="list-style-type: none"> A complete lecture flash drive 	<p>Who Should Attend Those responsible for determining compliance with FCC Rules and Regulations (and CISPR 22/32), including:</p> <ul style="list-style-type: none"> Product managers and developers EMC engineers and test technicians Regulatory compliance managers Test instrumentation developers Those using and calibrating antennas in making radiated emission compliance measurements Calibration technicians Calibration and measurement accreditation bodies Lab quality assessors Test instrumentation and chamber manufacturers <p>Expert Instructors Workshops feature leading industry experts and ANSI C63® members, including Don Heirman, Workshop Director, (Don HEIRMAN Consultants), and Zhong Chen (ETS-Lindgren).</p>	<p>Date and Location May 17, 2016 EMC Lab at Bureau Veritas 7layers in Shenzhen <i>Address to be provided upon registration.</i></p> <p>Fee Includes Transportation to/from the convention center, complete lecture flash drive, continental breakfast, lunch, breaks, and completion certificate. Fee does NOT include copies of the draft or published standards. Fee does NOT include hotel accommodations. See www.apemc2016.org for hotel and symposium information.</p> <p>Agenda ANSI C63.4: Half-day May 17 8:00 am Registration Class: 8:30 am to 12:00 pm</p> <p>Time Domain: Half-day May 17 Registration: 12:00 pm Class: 1:00 pm to 5:00 pm</p>
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<p>Registration Form Contact: Janet O'Neil Telephone: 425-868-2558 j.n.oneil@ieec.org</p>	<p>Payment Options:</p>						
<p>Ms./Mr. <input style="width: 100%;" type="text"/></p> <p>Company <input style="width: 100%;" type="text"/></p> <p>Address <input style="width: 100%;" type="text"/></p> <p>City <input style="width: 30%;" type="text"/> State <input style="width: 30%;" type="text"/> Zip <input style="width: 30%;" type="text"/></p> <p>Daytime Phone <input style="width: 30%;" type="text"/> Fax <input style="width: 30%;" type="text"/></p> <p>Email <input style="width: 100%;" type="text"/></p>	<p>ON LINE: To pay on line, send an email to j.n.oneil@ieec.org along with a scan of this <u>completed</u> registration form. An invoice will be returned to you via email which you can use to pay on line with your credit card.</p> <p>CHECK: Make check payable to U.S. EMC Standards Corporation in U.S. dollars drawn on a U.S. bank. Mail to:</p> <p style="text-align: center;">Dan Hoolihan P.O. Box 367 Lindstrom, MN 55045</p>						
<p>C63.4 Emissions workshop only – 17 May 2016 (morning)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">By April 1*:</td> <td style="width: 30%; text-align: right;">\$ USD 30.00</td> </tr> <tr> <td>C63® & S/C Members (by April 1)</td> <td style="text-align: right;">\$ USD 25.00</td> </tr> </table>	By April 1*:	\$ USD 30.00	C63® & S/C Members (by April 1)	\$ USD 25.00	<p>PLEASE DO NOT MAIL AFTER APRIL 15, 2016.</p> <p>Please visit www.c63.org/workshops.htm for more information on ANSI ASC C63®, these workshops, and speaker biographies.</p>		
By April 1*:	\$ USD 30.00						
C63® & S/C Members (by April 1)	\$ USD 25.00						
<p>Time Domain workshop only – 17 May (afternoon)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">By April 1*:</td> <td style="width: 30%; text-align: right;">\$ USD 30.00</td> </tr> <tr> <td>C63® & S/C Members (by April 1)</td> <td style="text-align: right;">\$ USD 25.00</td> </tr> </table>	By April 1*:	\$ USD 30.00	C63® & S/C Members (by April 1)	\$ USD 25.00	<p>NOTE: You are not registered until you receive confirmation. **With prior telephone confirmation on</p>		
By April 1*:	\$ USD 30.00						
C63® & S/C Members (by April 1)	\$ USD 25.00						
<p>Both workshops – All day 17 May</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">By April 1*:</td> <td style="width: 30%; text-align: right;">\$ USD 50.00</td> </tr> <tr> <td>C63® & S/C Members (by April 1)</td> <td style="text-align: right;">\$ USD 40.00</td> </tr> <tr> <td>*+\$25 USD if after April 1 or at the door</td> <td style="text-align: right;">\$ USD _____</td> </tr> </table>	By April 1*:	\$ USD 50.00	C63® & S/C Members (by April 1)	\$ USD 40.00	*+\$25 USD if after April 1 or at the door	\$ USD _____	<p>The organizing committee reserves the right to substitute speakers, modify the program (or lecture notes), restrict attendance or to cancel the workshop(s). In the event the workshop(s) is/are canceled, registration fees will be refunded. No refunds will be made to individuals who cancel after May 1, 2016. Substitutions are allowed. <i>Workshops without a minimum of six attendees signed up by May 1, 2016 will be cancelled and registration fees returned. It is suggested that you book refundable travel arrangements as appropriate if workshop(s) is/(are) cancelled</i></p>
By April 1*:	\$ USD 50.00						
C63® & S/C Members (by April 1)	\$ USD 40.00						
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	Total \$						

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- The WIRELESS TOUR Includes a Demonstration of MIMO Measurements Using the CTIA Authorized Test Lab

Free transportation and buffet provided.

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6:00 PM – 7:30 PM EMC TOUR
7:30 PM – 9:00 PM WIRELESS TOUR

LIMITED SEATING! REGISTER NOW AT:
<https://bv7layertour.eventbrite.com>



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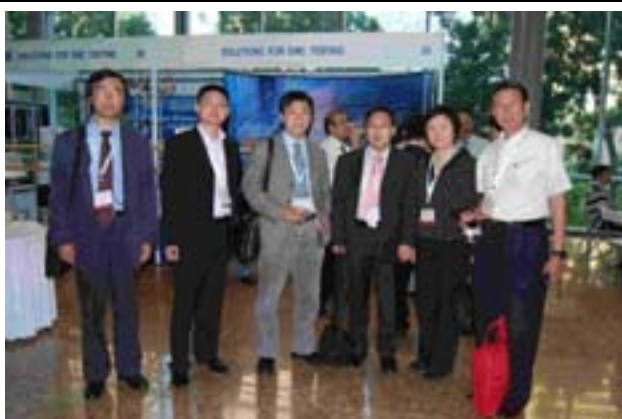
APEMC: THE PAST, PRESENT & FUTURE

2006 EMC-ZURICH in SINGAPORE

The 17th International Zurich Symposium and Technical Exhibition on Electromagnetic Compatibility (EMC Zurich in Singapore 2006) was held from February 27 to March 3, 2006 at the Singapore SUNTEC International Convention and Exhibition Center. This was the first time that EMC Zurich was organized outside Europe. The Symposium was attended with 450 delegates from over 40 countries.

The General Chair was the late Professor Ruediger Vahldieck from ETH Zurich; The Symposium President was Dr Er-Ping Li, from A*STAR-IHPC, Singapore; and the Technical Program Committee Chairs were Professor Jianguo Ma from Nanyang Technological University, and Professor Todd Hubing, Clemson University.

At this meeting, the “Asia-Pacific EMC Chairpersons Meeting” was held and decided for unification of EMC symposia in the Asia-Pacific region, and to establish one united Asia-Pacific Symposium on EMC that could be held every one or two years moving from one Asian country to the next. A Steering Committee was formed consisting of one representative from each country or region. The first such Asia-Pacific Symposium on EMC was decided held in 2008.



2008 APEMC IN SINGAPORE

The 2008 Asia-Pacific EMC Symposium (APEMC) was held in conjunction with the 19th International Zurich Symposium and Technical Exhibition on Electromagnetic Compatibility (EMC-in-Singapore 2008), under the theme “The Gateway to Emerging Technology,” from May 19 to 22, 2008 at the Singapore SUNTEC International Convention and Exhibition Center. This event addressed the needs of a rapid rising EMC community in the region. The 2008 APEMC laid down the Asia-Pacific EMC foundation and identity, and it will continue from this point onwards.

The General Chair was Dr Erping Li, A*STAR-IHPC, Singapore, General Co-Chair was the late Professor Ruediger Vahldieck from ETH Zurich. The Technical Program Committee Chairs were Professor Shen Zhongxiang from Nanyang Technological University, and Professor Flavio Canavero from Politecnico di Torino, Italy.

2010 APEMC IN BEIJING

The 2010 Asia-Pacific International Symposium on Electromagnetic Compatibility (APEMC) was held from April 12 to 16, 2010 at the Beijing International Convention Center with the theme of “EMC Harmonizes the World.” Over 700 delegates from 43 countries and regions attended this event, which makes the APEMC a truly global conference. In addition, 68 exhibitors were collocated with the APEMC 2010. APEMC2010 has been the largest EMC event in China, which provided an opportunity to bridge the EMC community in China and the World.

The General Chair was Professor Jinliang He, Tsinghua University, TPC Chairs: Professor Su Donglin from Beihang University and Professor Todd Hubing from Clemson University.



2011 APEMC IN JEJU ISLAND, KOREA

The 2011 Asia-Pacific EMC Symposium (2011 APEMC) was held in Jeju Island in Korea from May 16 to 19, 2011 at the Ramada Plaza Jeju Hotel. Jeju Island, Korea.

The General Chair was Dr. Jeong-Ki Pack, Chungnam National University and the TPC Chair was Professor Joungho Kim, from KAIST. Over 375 people from 20 countries from Asia, Europe, Australia, and North America attended this symposium. The technical exhibition was held concurrently with the symposium with 16 exhibitors.

2012 APEMC IN SINGAPORE

The 2012 Asia-Pacific International Electromagnetic Compatibility Symposium and Technical Exhibition was held on May 21-24, 2012 at Resorts World Sentosa (RWS) Singapore. The General Chair was Professor Wolfgang Hoefler and the TPC Chair was Professor Er-Ping Li.

With the aid of Singapore’s organizing team, the conference was a resounding success. The venue was carefully chosen for providing some of the best convention facilities to accommodate our technical sessions, workshops, special events and exhibits;





2013 APEMC in Melbourne

APEMC 2013 was held at the iconic Melbourne Cricket Ground (MCG) on May 20-23, 2013 in Melbourne. It was hosted by the EMC Society of Australia, with the IEEE EMC Society as Technical Co-Sponsor.

General Chair was Dr Franz Schlagenhauer,

TPC Chairs were Dr Bill Radasky and Prof Christophe Fumeaux.

2015 APEMC IN Taipei

The 2015 Asia-Pacific International Symposium on Electromagnetic Compatibility (APEMC 2015) was successfully held on May 25-29, 2015 at the Grand Hotel, Taipei, Taiwan.

The General Chair was Prof Tzong Lin Wu from National Taiwan University and the TPC Chair: Dr. Ding-Bing Lin, National Taipei University of Technology.



2016 APEMC in SHENZHEN

The 2016 Asia-Pacific International Symposium on Electromagnetic Compatibility (APEMC 2016) is held on May 18-21, 2016 at the Shenzhen Convention and Exhibition Center.

The General Chair is Professor Er-Ping LI, and the TPC Chairs are Professor Lijun Jiang from Kongkong University, Professor Farhad Rachidi from

Swiss Federal Institute of Technology, and Dr En-xiao Liu from A*STAR, Singapore.





2017 APEMC in KOREA

The 2017 Asia-Pacific International Symposium on Electromagnetic Compatibility (APEMC 2017) will be held in Korea.

2018 JOINT APEMC AND IEEE EMC SYMPOSIUM in SINGAPORE.

May 14-17, 2018





2018 Joint IEEE International Symposium on Electromagnetic Compatibility
 &
 Asia-Pacific Symposium on Electromagnetic Compatibility
(2018 Joint IEEE EMC/APEMC)

May 14-17, 2018
Singapore

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A harmonious Future

Little Red Dot; Big EMC Event





Institute for Electromagnetic Information and Integration Research

Electromagnetic Environment and EMC

Research Centre

Center for Electromagnetic Environment and EMC was founded at Zhejiang University and aims to devote the research and development in the fields of: IC and package EMC, system level EMC, antenna research and nano material for EMC. The center strengthens its core capabilities through dedicated R&D, alliance and collaborations with leading research organizations and universities world-wide. It is also committed to collaborate and perform value-added R&D with international industrial companies.

CORE COMPETENCIES

IC & Package EMC

- IC EMC, Package EMC
- Signal & power integrity
- Multi-physical analysis



Shielding design of interconnects for 3D IC

Antenna Research

- Wideband antenna for 5G communication
- Flexible antenna
- Reconfigurable antenna



Tunable antenna for 5G communication.

System Level EMC

- Electromagnetic scattering & shielding
- EMI & electrostatic discharge
- Noise propagation & its control



Reducing EMI of the system at microwave frequency

Nano Material for EMC

- Nano material for shielding
- Graphene-based FSS
- Graphene-based absorber



Application of nano material for more than moore technology

Contact

Prof. Er-Ping Li
Tel: 0571-87953026
Fax: 0571-87953026
Email: liep@zju.edu.cn



<http://rfne.zju.edu.cn>

Zhejiang University, Hangzhou 310027, China

Test Handbook

随着电子产品集成度的提高，电子产品中元器件的集成度越来越高，这给产品的电磁兼容设计带来了新的挑战。本文主要介绍在电子产品中如何应用 EMI 滤波器，以及如何通过 EMI 滤波器的设计来降低产品的电磁辐射。文章首先介绍了 EMI 滤波器的基本原理，然后详细分析了 EMI 滤波器的设计方法，最后给出了 EMI 滤波器的应用实例。通过本文的学习，读者可以了解 EMI 滤波器的设计原理和方法，为产品的电磁兼容设计提供参考。



图 5 Test IC 滤波板效果

3.2 Test IC 滤波电路原理

在电子产品中，滤波电路是一种常见的电路，其主要作用是滤除电路中的噪声和干扰信号。在 EMI 滤波电路中，滤波器的作用是滤除电路中的电磁辐射信号，从而降低产品的电磁辐射。本文主要介绍 Test IC 滤波电路的原理，以及如何通过 Test IC 滤波电路的设计来降低产品的电磁辐射。文章首先介绍了 Test IC 滤波电路的基本原理，然后详细分析了 Test IC 滤波电路的设计方法，最后给出了 Test IC 滤波电路的应用实例。通过本文的学习，读者可以了解 Test IC 滤波电路的设计原理和方法，为产品的电磁兼容设计提供参考。

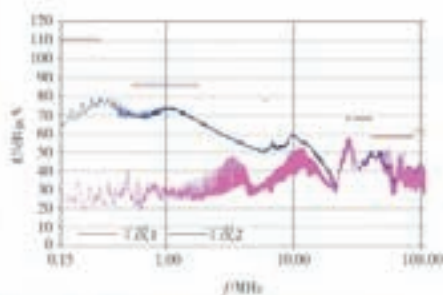


图 1 传导发射测试曲线 (PK 检测器)

倘若有效。采用前述的标准方法就存在一定局限。例如，针对上述测试对象，10 MHz 以下频段辐射值明显变大，这可能与设备中某些电路有关。这是因为高频电路与低频电路之间存在耦合，导致低频电路受到高频电路的干扰。因此，在测试过程中，需要采取一些措施来减少这种耦合的影响，例如使用屏蔽罩或滤波器。

发一系列问题，如收音机、干扰等。

3 耦合衰减测试研究

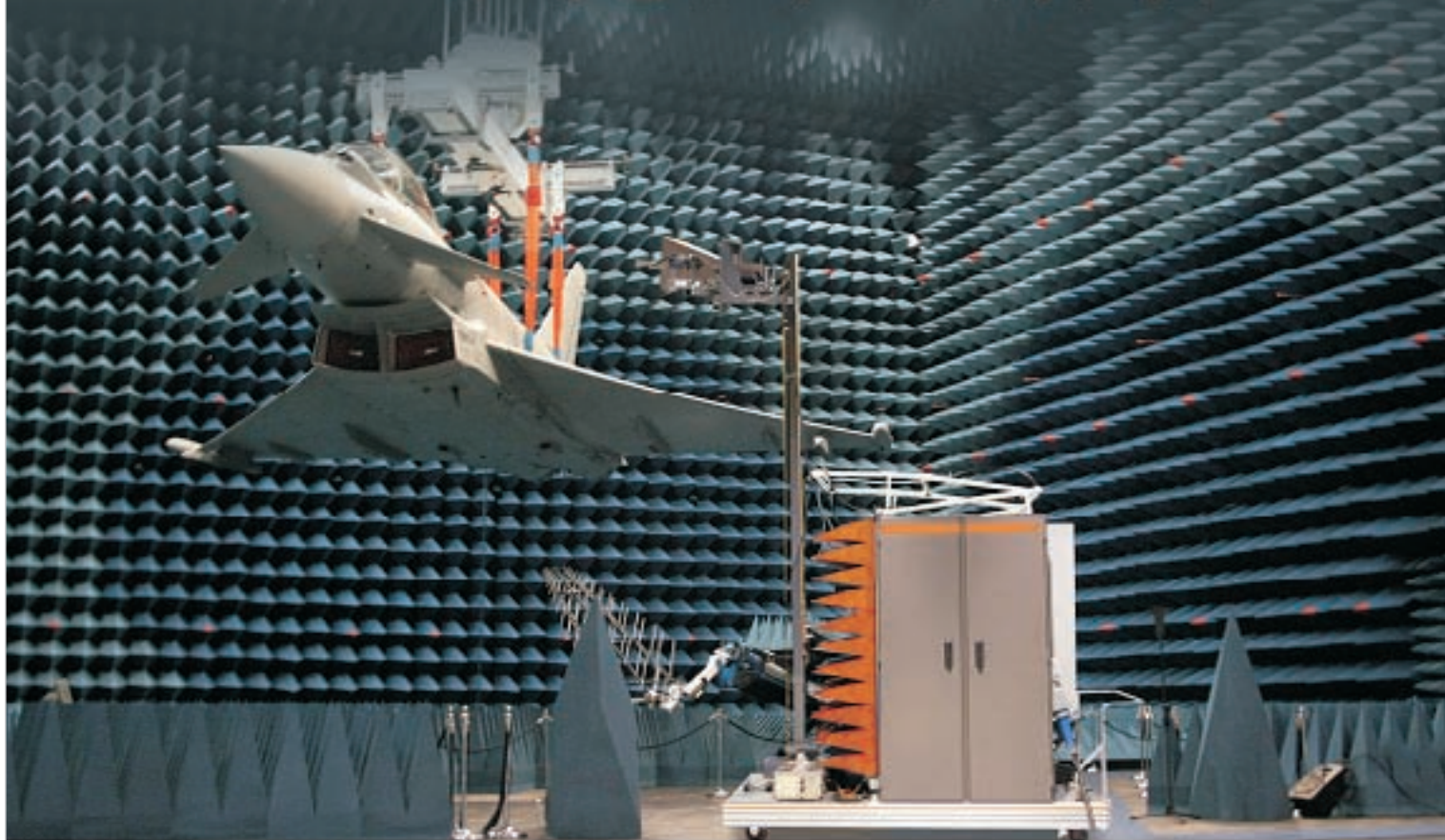
高频器件中耦合衰减测试是电磁兼容测试中的一个重要部分。耦合衰减测试的目的是评估高频器件在电磁兼容测试中的性能。本文主要介绍耦合衰减测试的原理、方法和应用。文章首先介绍了耦合衰减测试的基本原理，然后详细分析了耦合衰减测试的设计方法，最后给出了耦合衰减测试的应用实例。通过本文的学习，读者可以了解耦合衰减测试的设计原理和方法，为产品的电磁兼容设计提供参考。

耦合衰减测试的原理是基于耦合系数的概念。耦合系数是指两个电路之间的耦合程度，通常用 dB 表示。耦合系数的计算公式为： $C = 20 \lg \frac{V_2}{V_1}$ ，其中 V_1 是输入电压， V_2 是输出电压。耦合系数的值越大，表示耦合程度越高。耦合衰减测试的目的是通过测量耦合系数来评估高频器件的电磁兼容性能。

EMC Guidance



一个完美的结合



为了满足各种高性能的EMC测试需求，AR和MVG公司联合起来为您提供交钥匙解决方案。

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- 射频/微波功率放大器，功率高达50,000瓦
- 射频/微波天线，频率高达50 GHz
- 抗电磁辐射系统，频率高达50 GHz

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APEMC

APEMC 2016

Shenzhen, May 18-21

Shenzhen Convention and Exhibition Center, Shenzhen