2010 APEMC WEEK

2010 Asia-Pacific International Symposium on Electromagnetic Compatibility

&

Technical Exhibition on
EMC and RF/Microwave Measurements & Instrumentation

Final Program

Beijing International Conference Center
April 12-16, Beijing, China

www.apemc2010.org www.emc-zurich.org

Organizers, Sponsors and Exhibitors

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Sponsorship Acknowledgement

The Organizers of
Asia-Pacific Symposium on EMC in Beijing 2010
gratefully acknowledge
the generous contribution of all Sponsors

Symposium Co-Organizers

China Electric Power Research Institute (CEPRI)

国家电网 STATE GRID
中国电力科学研究院 CHINA ELECTRIC POWER RESEARCH INSTITUTE

China Electric Power Research Institute (CEPRI), established in 1951, is a multi-disciplinary and comprehensive research institution in China's electric power sector as well as a subsidiary research institute of the State Grid Corporation of China (SGCC). We are active in a broad variety of research areas relevant to strong smart grid, bulk power grid planning and operation, extra/ultra high voltage power transmission and transformation, power transmission and transformation equipment, power electronics, electric power automation, power supply and utilization, information and communication technology, electric energy metrology, engineering mechanics for power transmission and transformation projects, electric power construction, renewable energy (wind power), electrical engineering and new material technology.

Our reputation for capability of doing scientific research, technical consultation and product development, built by so many people over so many years, has been tested and proved in each service and product we offer. Currently, we own 12 research departments, 17 commercial companies, and 39 laboratories, among which, there are national labs including national key laboratory on power grid safety and energy conservation, national engineering laboratory on power system simulation and national engineering laboratory on ultra high voltage engineering technology (Beijing).

We pride ourselves for being an excellent place to nurture and attract a large number of excellent experts and management personnel. By the end of 2009, we had 6,257 employees in total. We had one academician of Chinese Academy of Sciences, three academicians of Chinese Academy of Engineering, 133 experts entitled to Government Special Allowance (GSA) of the State council, and 9 national distinguished experts.

In recent years, we have devoted ongoing efforts to accelerate the application of our research outputs to the industry and promote product development. As a result of this, we have become the competent supplier of products for technologies related to power electronics, power system automation, information infrastructure project, UHV equipment, power plant control, high temperature and high pressure pipe fittings, and online monitoring systems, and owned independent intellectual properties for many significant research findings.

In addition, we play an important part in standardization. Three national standardization committees, respectively on HVDC engineering, overhead lines, and condition- based maintenance and online monitoring system, the Secretariat of Standardization Committee on UHVAC Transmission, 12 professional standardization committees for power industry, and one IEC TC centralized management unit in China are attached to CEPRI. Since its establishment, CEPRI has made remarkable contribution to each milestone stage of the development of China's electric power industry and and provided strong technical support to the construction and development of China's power grid. We have been awarded with 76 prizes of National Science and Technology Progress Award (including 6 first-class awards), a second-class prize of National Technology Invention Award, and 360 provincial and ministerial awards for science and technology progress (including 35 first-class awards). Additionally, we have acquired 168 national patents, won a gold medal of the 8th China Patent Award.

Adhering to the corporate spirit of "In search of excellence, in pursuit of out-performance" and the corporate philosophy of "China's electric power, our responsibility", we believe through years of efforts our vision of becoming a prestigious science and research organization and high-tech enterprise with competitive excellence in electric power industry will come true.

China Southern Power Grid Technology Research Center (CSG TRC)

中国南方电网
CHINA SOUTHERN POWER GRID

CSG TRC is an organization under the CSG administration. CSG TRC is specially engaged in the R&D of the fundamental, commonly-shared, advanced and core power grid technologies, also responsible for the integration and optimization of the CSG internal research resources, and licensed to contract the business such as HVDC joint-technical design, simulation test, project commissioning, consultancies and training.

For the purpose of making company-selves further promotion and adapting for the needs of the West-to-East Power Transmission Projects, CSG started the construction of UHV test station since 2006. The new UHV test station can provide strong technique support on research, engineering construction and safe operation for UHV DC transmission. In August 2008, CSG Kunming UHV test station has been approved as National Engineering Laboratory for UHV Technology, being one of the six National Engineering Laboratories of first-group under the conduct of the National Development and Reform Commission (NDRC) P.R. of China. Laboratory is supported by China Southern Power Grid Co. Ltd and cooperated with Tsinghua University.

National Engineering Laboratory for UHV Technology (Kunming) is located in Songming country of Kunming city, Yunnan Province, at an altitude of 2100 meters and with covering an area of some 500 by 350 meters. The station is constructed in two phase. The first phase is mainly focused on UHV DC and the second is for UHV AC. The construction of first phase includes: UHV outdoor test site, EM environment experimental site, long-term test site for UHV electrical equipments, UHV DC/AC Pollution pollution Test test Laboratorylaboratory, etc. In August 2009, the construction of the first phase is completed and put into operation.

EM environment experimental site consists of UHV DC test line and EM environment test site. The DC test line is one way line with length of 800m, consisting of two strain towers and two straight towers with three spans, 195m-410m-195m. All-weather bipolar UHV DC generator (±1200kV/500mA) energizes the DC test line. EM environment test site (40m×260m) is configured with all-weather on-line monitoring system of corona losses, radio interference, audible noise, electric field and ion current. The main function of EM environment experimental site is mainly applied to the research on EM environment and electrical ecology experiment of UHV DC, UHV AC and mixed DC/AC fields. The experimental research for suppression method of electromagnetic interference can be also carried out in the site.

Platinum Sponsor

河南平高电气股份有限公司
HENAN PINGGAO ELECTRIC CO ., LTD.

Henan Pinggao Electric Co., Ltd., one of the bases for researching, developing and manufacturing high voltage and ultrahigh voltage switchgear in China, is a backbone enterprise for the prominent technical equipment of national electrotechnical industry and a listed company on Shanghai Stock Exchange (share code: 600312).

Pinggao, ocuppying the aera of 620 000 square meters, owns total assets of 3.1 billion and fifteen subsidiary companie such as Henan Pinggao Toshiba High Voltage Switchgear Co., Ltd. (a Sino-Japan joint venture).

Pinggao, the first company in high voltage switchgear industry to pass the certification for "High-tech enterprise and high-tech product" from Chinese Academy of Science and Ministry of Science and Technology of China, owns a national-class research & development center, with strong capability of science and technical innovation, and got an exclusive golden medal for the quality of high voltage switchgear of China. Main products include 72.5 kV ~ 1100 kV SF6 circuit breaker, GIS and disconnector, totally 3 classes, 15 series, more than 90 types.

Pinggao takes the development of national manufacturing industry as the responsibility all the time, provides the products with high quality and high reliability to the clients based on first-class technology and management, and contributes to eletric power construction of China continuously.

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AR RF/Microwave Instrumentation is the number one source for all your EMC equipment testing needs – from RF and microwave amplifiers and power-matched accessories to complete EMC test systems.

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- Test accessories
- RF test system controllers
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Silver Sponsors

Wuhan NARI Co. ltd
State Grid Electric Power Research Institute
（武汉南瑞有限责任公司）

State Grid Electric Power Research Institute Wuhan NARI Co., Ltd. (Hereinafter referred to briefly as Wuhan NARI) is a wholly owned subsidiary of State Grid Electric Power Research Institute Nanjing NARI Group Corporation. It is a high-tech enterprise which is located in National Wuhan East Lake High-Tech Development Zone and mainly engages in the primary intelligent equipment of power transmission and transformation, and specialized in providing scientific consults and technical services for the grids.

Wuhan NARI has more than 500 employees, 40% of them possess master degree and above, 41.5% of them hold medium and senior professional titles. The company attaches great importance to product quality management, and successfully passed the ISO9001: 2008 Quality Management System Certification, ISO14001: 2004 edition of Environmental Management System Certification and OHSAS18001: 1999 edition of Occupational Health and Safety Management System Certification.

Wuhan NARI has always regarded “people-oriented, loyal enterprise and contributing to society” enterprise concept as the cornerstone of development, providing clients with high voltage power transmission and transformation technologies and apparatuses, electric power and energy measurement technologies and equipments, electromagnetic compatibility technologies and equipments, high voltage test technologies and equipments, electrical equipment on-line monitoring and condition-based maintenance, synthetic insulated electrical equipment, lightning locating and monitoring system and equipment, lightning protection and grounding, power-specific vehicles, weather resistance towers, high voltage bushing, network engineering technology and electric power automation system and equipment, environment protection technology and equipment, optical fiber communication technology, new energy resources, new technology and equipment, consulting and developing on electric power technology, services and industry technical training, power equipment engineering and supervisory services.

The company is taking “efforts to go beyond, the pursuit of excellence” as the spirit of enterprise and “integrity, responsibility, innovation, and dedication” as the core values, adhering to scientific research and innovation, industrial innovation, operation and management innovation, constantly getting ahead of itself. Meanwhile, the company devotes to grasping the industry trends, improving their own products, enhancing research and technical services levels, and exploring new industry directions of intelligent primary equipments, including condition monitoring and condition-based maintenance of transmission and transformation equipment, composite insulation towers, high voltage bushing. We are trying our best to establish an intelligent primary equipments R&D center, operation service center of electrical power system and manufacturing center for intelligent primary equipments, on-line monitoring and condition-based maintenance equipments. The long-term aim of the company is to build enterprise with leading technology, complete range of products, advancing size and benefits in this industry, providing supports to State Grid Corporation in constructing strong and smart grid with technologies and equipments.

Lightning Protection Center of Guangdong Province
（广东省防雷中心）

As an official unit established in 1995, *Lightning Protection Center of Guangdong Province/GDLPC*, has been dedicated to the researches on lightning formation mechanism, and the application of protection technologies, such as lightning monitoring and nowcasting, risk assessment and management, LPS inspection & maintenance, etc.. GDLPC has made remarkable contribution to the industry security and economic development of Guangdong province.

As one of member units of SAC/TC258, GDLPC has been playing an active role in the standardization of lightning protection in China since 2000, and has made plentiful achievement. Its expert has become one of national members of IEC/TC81, so as to contribute to the drafting of IEC62305s international lightning protection standards. As the drafting unit of GB/T 21714.2:2008/IEC62305-2:2006, GDLPC is leading to develop technology of lightning risk assessment and risk management around China.

Guangzhou Field Experiment Site for Lightning Research and Testing, is the first basic, open and comprehensive experiment site which integrates lightning test, operation and scientific research in China. Up to now, it triggered lightning for 30 times, and obtained many comprehensive observation data about natural and triggered lightning, to lay a solid foundation for the research of lightning physics and protection technologies. The experiment site has become an important platform for sci-tech supports for lightning monitoring, lightning warning protection in China. More than 30 papers were published, including 8 SCI/SCIE, 8 EI. There are eight projects developed on the experiment site with many domestic and foreign universities and research institutions.

GDLPC's major responsibilities include centralized receiving and handling of the primary data about lightning monitoring within Guangdong province, investigations into major lightning disasters, basic researches on lightning and development of standards for protection. Its services cover: lightning detection and warning, LPS inspection & maintenance, risk Assessment and Risk management, Professional Training, etc.

- Lightning detection and monitoring: A comprehensive lightning detection and monitoring system was put into use in 2006, which includes lightning location system/LLS, electric field monitoring system and single atmospheric electric field observation. A new assemble Lightning warning and nowcasting system has been tested and developed.

- LPS inspection & maintenance: LPS inspection & maintenance for important industry sites are made by GDLPC.

Chinese Society for Electrical Engineering (CSEE)

www.csee.org.cn

Chinese Society for Electrical Engineering (CSEE) is a nonprofit, nongovernmental academic and professional organization of scientists and engineers in the electric alengineering field. The predecessor of CSEE is Chinese Society for Electrical Engineers, founded in Shanghai in 1934. CSEE was reestablished in Beijing in 1958, and became a member of China Association for Science and Technology in the same year.

CSEE is attached to the State Power Grid Corporation of China and under the guidance of CAST. Since 1958, CSEE has held eight National congresses. The present president is Mr. Lu Yanchang. CSEE has more than 120 thousand individual members and 1000 collective members. The membership composition includes power enterprises, power administrative and supervisory bodies, research institutes and universities, design and construction companies as well as machinery manufacturers. 33 provincial local societies are collective members of CSEE. CSEE has 34 Study Committees.

Best Student Paper Prize Sponsorship

IEEE Singapore EMC

IEEE Singapore EMC chapter is one of the affiliates of the IEEE Electromagnetic Compatibility Society which is the world's largest organization dedicated to the development and distribution of information, tools and techniques for reducing electromagnetic interference. The chapter aims to build a diversified platform to foster the exchange and development of scientific and technological knowledge on electromagnetic compatibility in the education and industrial manufacturing. Chapter currently has more than 30 members from industry, universities and research institutes.

Website: http://ewh.ieee.org/r10/singapore/emcs/

Conference Name Card Lanyard Sponsorship

ETS-Lindgren

ETS-Lindgren is a total solution provider of EMC certification, antenna, and wireless device test and measurement systems. With convenient turn-key systems, ETS-Lindgren minimizes customer risk by providing seamlessly integrated solutions from a single supplier. Customers can be assured that the systems comply with industry standards, produce repeatable results, and minimize uncertainty budgets.

Visit us at www.ets-lindgren.com

Message from the Symposium President and General Chair

Jinliang He
Symposium President

Wenliang Zhang
Co-President

Er-Ping Li
General Chair

Jie Zhao
General Co-Chair

It is our great pleasure to welcome you to 2010 APEMC in Beijing.

After the resounding success of the **2008 Asia-Pacific International EMC Symposium (APEMC) in Singapore** jointly organized with the **19th EMC Zurich Symposium**, it was decided to hold the **2010 APEMC in Beijing**. This event will continue in the spirit of APEMC and at the same time address the EMC community of the Asian-Pacific region and its link to the world. Beijing has been selected to host the 2010 APEMC because of its fabulous facilities and excellent business climate with the great success of the 2008 Beijing Olympic Game, and also because it is the world most vibrant city both in economic and technology development with rich cultures, modern & historical landmarks.

The 2010 Asia-Pacific Electromagnetic Compatibility Symposium and Technical Exhibition will be held in Beijing, Monday, April 12 through Friday, April 16, 2010. Following the tradition of APEMC we are planning a full week of EMC-related events. The symposium will cover the entire scope of electromagnetic compatibility as EMC measurement techniques, EM environment, lightning protection, power system EMC and high power EMC, IEMI, transportation EMC, system-level and chip-level EMC and protection, antenna and wave propagation, computational electromagnetics, semiconductor device and IC EMC, wireless communication EMC, bio-medical electromagnetics, and nanotechnology for EMC. On the other hand, we also selected 18 special sessions, 1 industrial forum, 14 workshops, 7 tutorials and 2 topical meetings.

A variety of invited speakers will focus on new and upcoming issues. 578 papers were submitted from 41 countries, and were selected on the basis of their scientific merit, their impact on industry and their interest to the EMC community as a whole. The Technical Program Committee (TPC) kept the same of APEMC 2008, all members are famous EMC experts in the world. The TPC meeting was held in April 12, 2009 at Tsinghua University, Beijing.

Particularly, the Topical Meeting on Lightning Protection to be held in conjunction with the APEMC2010 will be attended by the renown scientists and experts in lightning community.

On behalf of the organizers, we extend our warm welcome to all attendees, sponsors, exhibitors and visitors at **the EMC-Asia-Pacific Week in Beijing in 2010!** We will offer a rich scientific program of highest quality with invited speakers from all over the world and provide a broad forum of exchange for both academia and industry alike.

Your presence and contributions to the APEMC2010 in Beijing will make it an exciting and fruitful event. You will certainly benefit from the exceptional programs we provide, and the networking and quality time you spend with your peers.

Come and join us in Beijing for APEMC 2010!

Letter from the TPC Chair

Todd H. Hubing
TPC Chair

Less than 4 years since its inception, the Asia-Pacific International EMC Symposium has become one of the largest EMC conferences in the world. The Technical Program Committee (TPC), consisting of 67 prominent EMC researchers from all over the world, has worked hard to ensure that all papers accepted for publication and presentation at this conference meet the same high standards for technical quality that are applied by other highly respected EMC conferences. Overall, the TPC received more than 500 technical paper submissions coming from 38 countries on 6 continents. Each paper was reviewed by multiple qualified reviewers and final decisions regarding the technical papers and program were made at a TPC meeting held in Beijing last December.

Paper submissions for the 2010 APEMC Symposium covered a wide range of EMC-related topics. The topic areas receiving the most submissions were lightning, computational electromagnetics, microwave components, antennas, EMC measurements, biomedical EMC, and system-level EMC. Other topics that are well represented include electronic packaging, EMC materials, power systems and transportation EMC.

Whatever your EMC field of specialization, we're sure you'll find something of interest in this technical program. We hope your visit to Beijing is both productive and enjoyable!

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Tsinghua University, China

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Secretary
Rong Zeng, China

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M. Paolone, Italy
A. Piantini, Brazil
X. S. Qie, China
M. Rubinstein, Switzerland
R. Thottappillil, Sweden
S. Visacro, Brazil

General Information

1. APEMC 2010 Conference Venue

Beijing International Convention Center

Address: No.8 Beichen Dong Road, Chaoyang District, Beijing P. R. China 100101

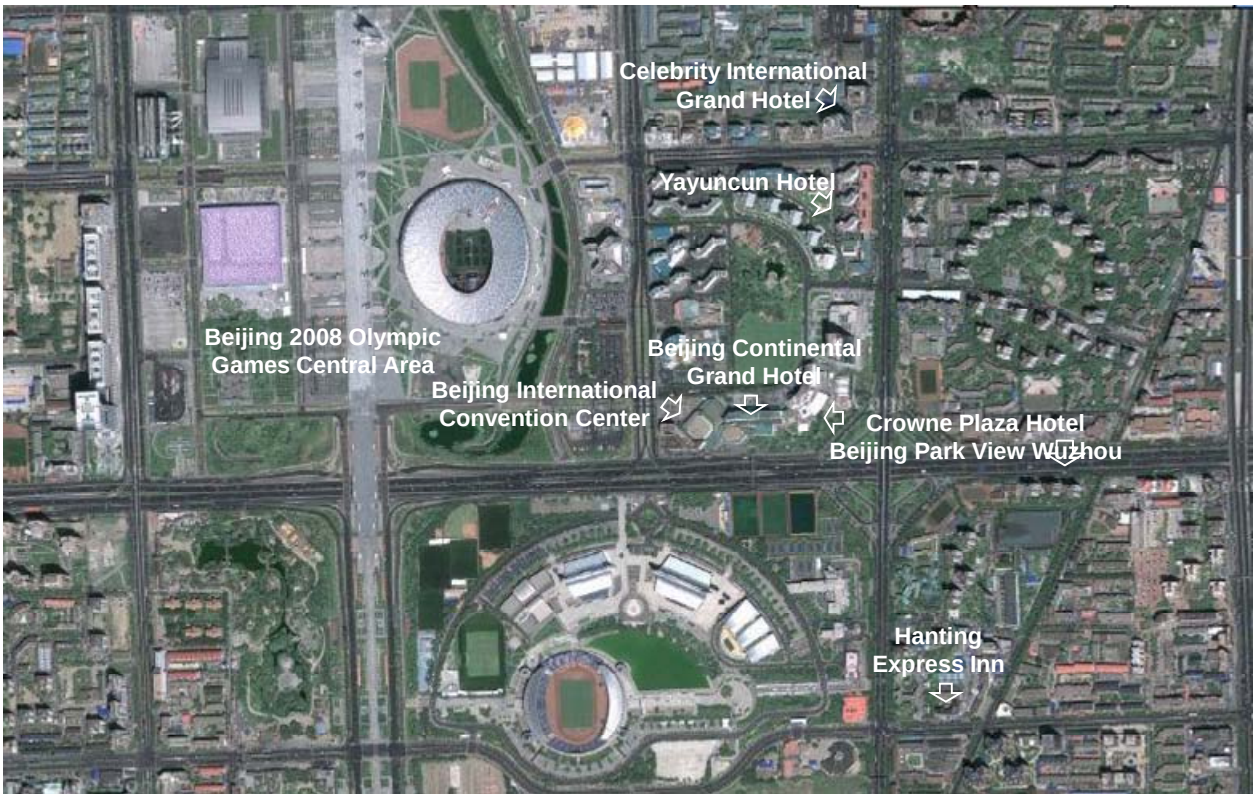
Tel: (8610) 84980105 / 84985588, Fax: (8610) 84970106 / 84972651

Website: http://www.bicc.com.cn/english/jiudian/index.asp

Beijing International Convention Center and Beijing Continental Grand Hotel are a well known enterprise in Beijing. Opened in 1990, the convention center has served almost 1, 000 different international and domestic conventions, exhibitions and meetings each year since its conception. In 2002 the hotel and convention center merged together, creating a stronger reputation with more effective management.

Beijing International Convention Center is a 5 star tourist service unit with a floor space of 77, 000 square meters. It is one of the Chinese biggest facility specifically designed for conferences and exhibitions, comprising 50 conference halls and meeting rooms equipped to serve a wide variety of purposes with the capacity from 10 up to 2500 people, as well as 5, 000 square meters indoor exhibition halls accommodated as many as 300 international standard exhibition booths and dozens of offices.

The Conference Building also has a business center, an audiovisual studio, a post office, an information counter, spacious registration hall, public and VIP lounges and bars located on each floor. The halls are equipped with international-advanced simultaneous interpretation system, first-rate acoustic apparatus, a live TV relay system, inside and outside communication system, video conference system, etc.



(A) Beijing Airport

(B) Beijing International Convention Center

(C) Beijing 2008 Olympic Park

(D) Tiananmen Square & Forbidden City

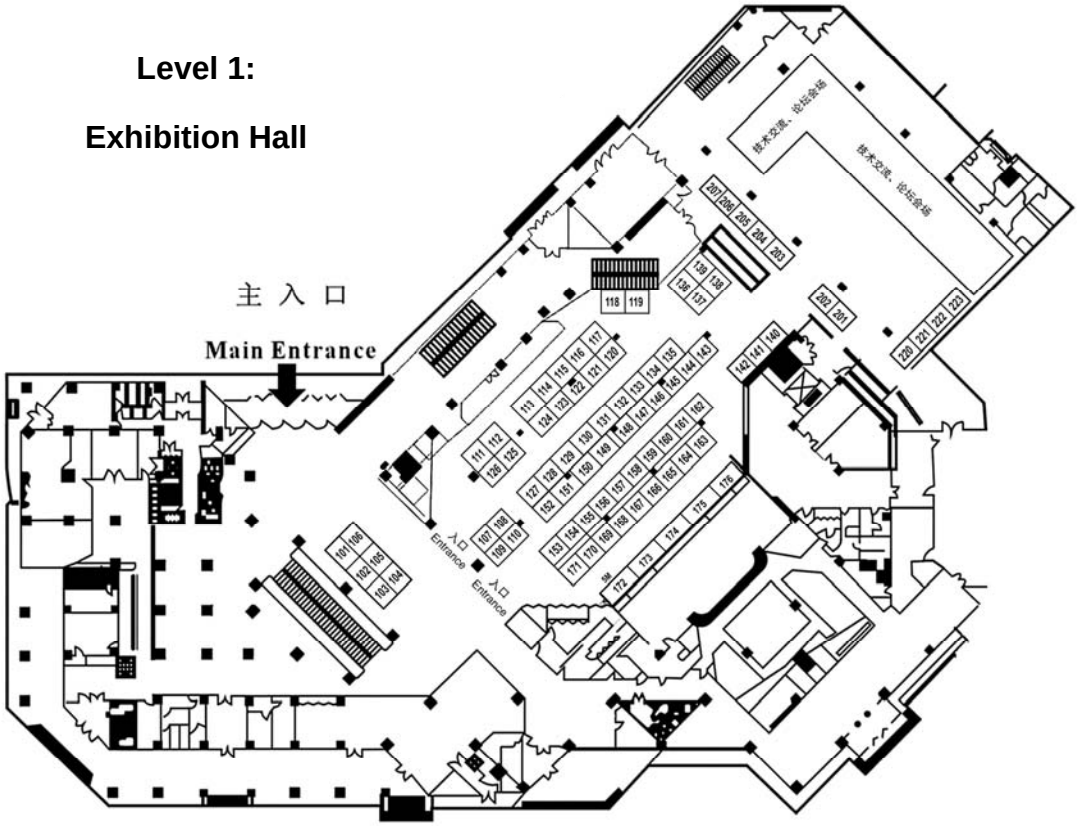
(E) Summer Palace

(F) The Great Wall

Floor Plans and Photos of Beijing International Convention Center

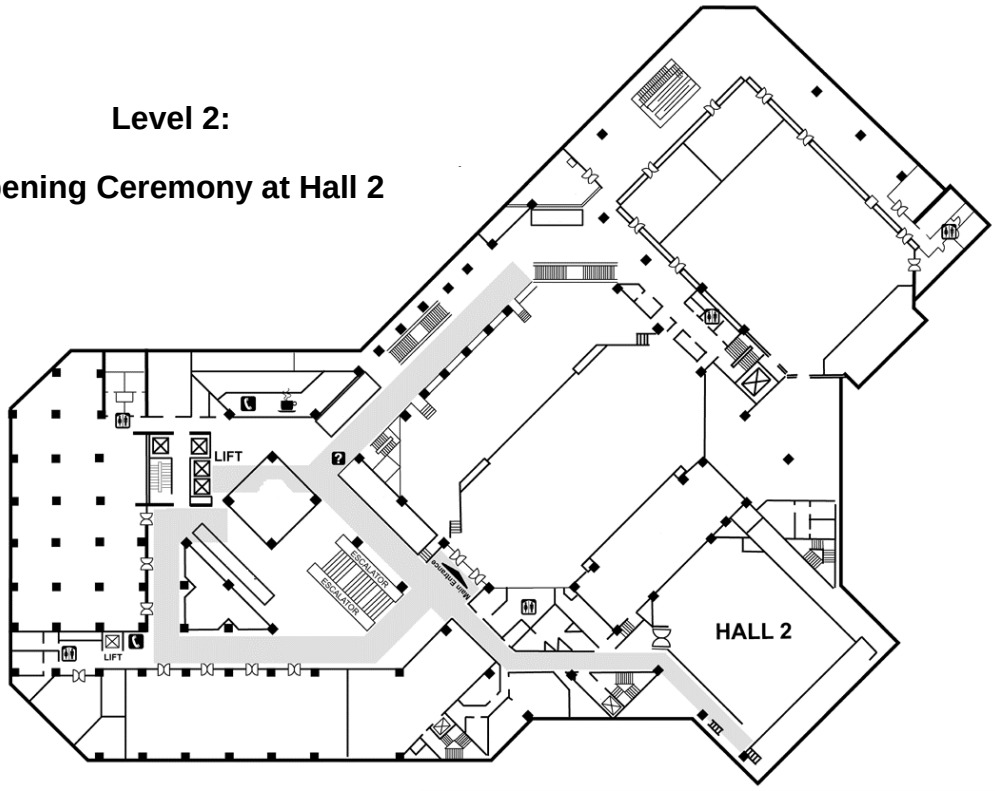
Level 1:

Exhibition Hall



Level 2:

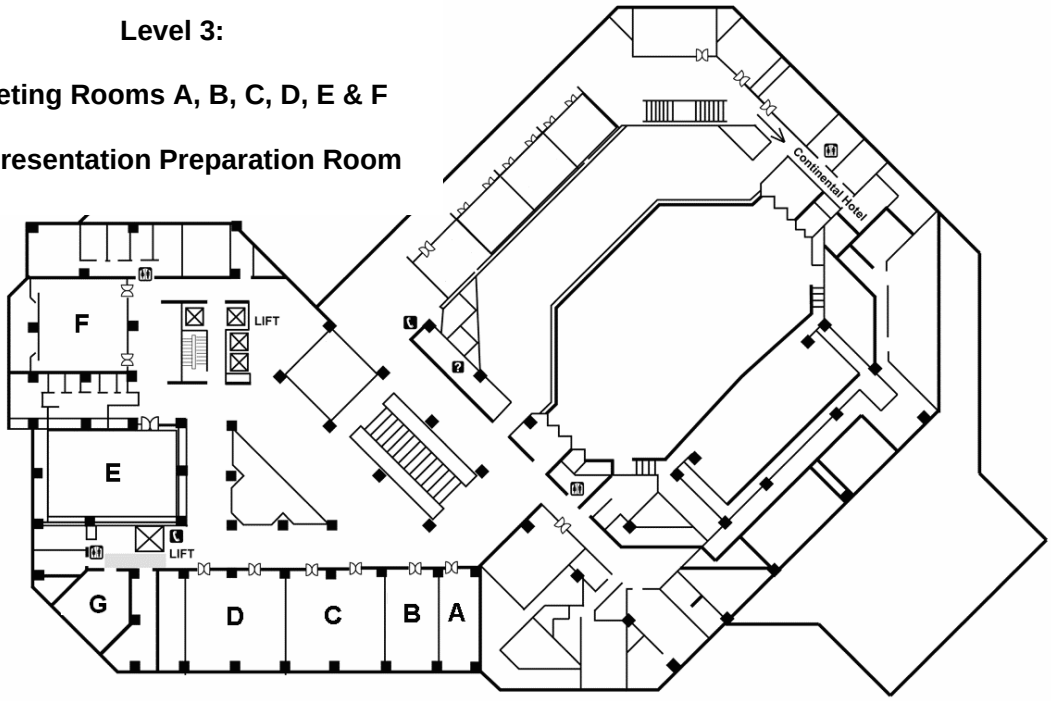
Opening Ceremony at Hall 2



Level 3:

Meeting Rooms A, B, C, D, E & F

G: Presentation Preparation Room



2. Contacting Telephone Numbers

Symposium Secretariat
Dr Zhanqing Yu
Tel: +86-10-62788811, Mobile: +86-13611013023, Fax: +86-10-62784709
Email: apemc2010@tsinghua.edu.cn

Dr Jun Hu
Mobile: +86-13910512876
Email: hjun@tsinghua.edu.cn

3. Registration Hours

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

- **11 April – Sunday**
  From 2:00pm to 6:00pm in the First Floor
- **12 April – Monday**
  From 8:00am to 6:00pm in the First Floor
- **13 April – Tuesday**
  From 8:00am to 6:00pm in the First Floor
- **14 April – Wednesday**
  From 8:00am to 5:00pm in the First Floor
- **15 April – Thursday**
  From 8:00am to 5:00pm o in the First Floor
- **16 April – Friday**
  From 8:00am to 11:00pm in the First Floor

4. Speaker Guides

Poster Presentation

Poster sessions will be located at the meeting room 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.

1. Prepare your poster

Each presenter is provided with a 2.4 metre high by 1 metre wide poster board.

- The presentation must cover the same material as the abstract.
- 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 abstract'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 them 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.

2. Set up Your Poster

- Student best paper competition will be held in the afternoon of 13 April, Posters should be set up between 1:20pm and 4:20am on 13 April.
- Other Posters are scheduled to be on display from 10:20 am to 3:20 pm daily on 14 to 15 April.
- Please make sure that your paper number is clearly visible on your poster board.
- Open forum is as scheduled, presenters are required to be at their posters during that time.
- Tapes and other materials are available at the Information Desk, nearby the poster boards.

3. Remove Your Poster

Posters must be removed immediately after the poster session is closed. Posters remaining after 30 minutes will be removed. APEMC in Beijing organizer will not be responsible for posters and materials left on poster boards after the stated hours.

4. 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.

Oral Presentation

1. 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 presentation materials if it is Power Point before the session starts. But for the Topical Meeting on Lightning Protection, each invited oral presentation is limited to 25 minutes including questions and answers, and others 15 minutes.

All speakers should come to the conference rooms 15 minutes before the session opening and copy the presentation materials into the computers provided by conference organizers.

2. Determine Your Audio Visual Needs

All meeting rooms are equipped with the following audio-visual equipment:
1-LCD Projector
1-Window-based PC
1-Screen
1-Laser Pointer

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

3. 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, CD-R and CD-RW are accepted.

4. 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 Hours

12-15 April 2010：08:40 – 18:00
16 April 2010: 08:40 – 12:20

12 April – Monday to 16 April – Friday
Delegate Arrival & Registration
The registration will be opened at 14:00 pm, 11 April, 2010, in the First Floor of Beijing International Convention Center.

12 April – Monday
- Workshops/Tutorials
- Booth Dressing for Exhibitors (Level 1 Exhibition Room)
- Evening Reception (Banquet Hall, Second Floor of Beijing North Star Continental Grand Hotel)

13 April – Tuesday
- Official Opening, Plenary Speeches (Level 2 Meeting Hall 2)
- Parallel Technical sessions (Level 3 Meeting Rooms)
- Topical Meetings (Level 3 Meeting Rooms)
- Best student paper competition (Level 3 Concourse)
- Technical exhibition (Level 1 Exhibition Hall)

14 April – Wednesday
- Plenary Speeches (Level 2 Meeting Hall 2)
- Parallel Technical sessions (Level 3 Meeting Rooms)
- Topical Meetings (Level 3 Meeting Rooms)
- Technical Exhibition (Level 1 Exhibition Hall)
- Dinner Banquet (Level 2 Meeting Hall 2)

15 April – Thursday
- Parallel Technical sessions (Level 3 Meeting Rooms)
- Topical Meetings (Level 3 Meeting Rooms)
- Technical Exhibition (Level 1 Exhibition Hall)

16 April – Friday (8:40-12:20)
- Workshops/Tutorials (Level 3 Meeting Rooms)

Officially Opening Programme

Beijing International Convention and Exhibition Centre
10:40am-12:40pm, April 13, 2010

10:40-10:45am Welcome Address by Prof He Jinliang, Symposium President

10:45-10:50am Address by IEEE EMC President, Prof Francesca MARADEI

10:50-11:00am Officially Address by Guest of Honor, the Senior Deputy President of Tsinghua University

11:00-10:05am Address by Mr. Zhang Wenliang, Co-President of APEMC2010, and President of China Electric Power Research Institute

11:05-11:10am Address –Outline of APEMC History and Future by Prof Li ErPing, APEMC General Chair

11:10-11:20am Outline Speech by TPC Chair, Prof Todd Hubing

11:20-12:00pm Plenary Speech by Dr. Jing Wang (China), Opportunities and Challenges of TD-SCDMA

12:00-12:40pm Plenary Speech by Prof Neils Kuster, ETH-Zurich, Switzerland

Social Program, Lunch and Refreshments

- **Monday Welcome Reception**

  At Banquet Hall, Second Floor of Beijing North Star Continental Grand Hotel, which connects with the conference venue.
  12 April, 2010, Monday, 18:30-20:30

  Welcome to APEMC2010 Beijing! Symposium participants are invited to mingle while enjoying the light food and drinks during the opening welcome reception. Take the opportunity to interact with old friends and network new friends. The full fee has included the welcome reception.

- **Wednesday Night Award Banquet Dinner**

  At Level 2 Meeting Hall 2, Second Floor of Beijing International Convention Center
  14 April, 2010, Monday, 18:30-21:00

- **Lunch**

  At Banquet Hall, Second Floor of Beijing North Star Continental Grand Hotel
  12-15 April, 2010, Monday to Thursday, 12:00-13:40

- **Refreshments**

  Refreshments are served outside Meeting Rooms.

Award Presentations

The best sudent papers and the best symposium papers will be announced and the awards will be presented during the Wednesday Night Award Banquet Dinner. The awards presentations include

- **Best Student Paper Award**

Three prizes, first, second and third, selected from over 100 student papers are awarded. These student papers are reviewed in the same manner as all other and are further judged on content and presentation by the judge panel.

- **Best Symposium Paper Award**

- **Certificates of Appreciations of Sponsorship**

Internet

Free wireless internet is available inside the conference venue. You can use your own notebook to visit the internet. In addition, four public PCs will be provided for accessing internet by the conference.

Technical Sessions – Programs At a Glance

Technical Sessions

ID	Topic Ttile	Co-chairs
TC-1	EMC Management	Dr. WenLie Liang, *NPL, UK (Presently in QuieTek Corporation, Chinese Taipei)*
TC-2	EMC Measurement Techniques	Dr. Perry Wilson, *NIST, USA;* Dr. Xingchang Wei, *Institute of High Performance Computing (IHPC), A*STAR Singapore*
TC-3	Lightning Protection	Prof. Yoshihiro Baba, *Toshisha University, Japan,* Prof. Vladimir A. Rakov, *University of Florida, USA,* Dr. S. Yokoyama, *Central Research Institute of Electric Power Industry (CRIEP), Japan,* Prof. Farhad Rachidi, *Swiss Federal Institute of Technology- Lausanne, Switzerland*
TC-4	Electromagnetic Environment	Prof. Heyno Garbe, *Leibniz Universität Hannover, Germany*
TC-5	High Power EMC	Dr. William Radasky, *Metatech Corporation, USA*
TC-6	Power System EMC	Prof. Xiang Cui, *North China Electric Power University, China,* Dr. W. H. Siew, *University of Strathclyde, UK*
TC-7	System-Level EMC and PCB EMC	Prof. Francesca Maradei, *Sapienza University of Rome, Italy* Prof. Junwei Lu, *Griffith University, Australia*
TC-8	Transportation and Automotive EMC	Prof. Sergio Pignari, *Politecnico di Milano, Italy;* Prof. Junhong Wang, *Beijing Jiaotong University, China*
TC-9	Antenna and Propagation Issues	Prof. Zhijun Zhang, *Tsinghua University, China;* Prof. Sungtek Kahng, *Univ. of Incheon, Korea*
TC-10	Electronic Packaging and Integration EMC	Prof. Tzong-Lin Wu, *National Taiwan University, Chinese Taipei*
TC-11	Power Integrity and Signal Integrity	Prof. Jun Fan, *Missouri University of Science and Technology, USA*
TC-12	Communication EMC	Dr. Franz Schlagenhaufer, *Western Australian Telecommunications Research Institute (WATRI), Australia;* Prof. Peter Leung, *City University of Hong Kong, China*
TC-13	Computational Electromagnetics	Prof. Xinqing Sheng, *Beijing Institute of Technology;* Prof. Christophe Fumeaux, *The University of Adelaide, Australia*
TC-14	Nanotechnology in EMC	Prof. Marcello D'Amore, *University of Rome Sapienza, Italy*
TC-15	Microwave electronics and Components	Prof. Qun Wu, *Harbin Institute of Technology*
TC-16	EMC of Ics	Prof. Sonia Ben Dhia, *INSA de Toulouse, France,* Dr. Thomas Steinecke, *INFINEON, Germany*
TC-17	Biomedical Electromagnetics	Dr. C.-K. Chou, *Motorola Inc. USA,* Prof. Jianqing Wang, *Nagoya Institute of Technology, Japan*
TC-18	EMC Material	Dr. Yaojiang Zhang, *Institute of High Performance Computing, Singapore*

Special Sessions/Topical Meetings/Industry Forum

ID	Topic Ttile	Co-chairs
SS-1	EMC test and measurement	Dr. WenLie Liang, *QuieTek Corporation, Chinese Taipei* Prof. Han-Nien Lin, *Feng Chia University, Chinese Taipei*
SS-2	Recent Progress in EMC Numerical Modeling	Dr. Qingsheng ZENG, *Communications Research Centre Canada*
SS-3	EMC Computer Modeling and Simulation	Prof. Junwei Lu, *Griffith University, Australia*
SS-4	Recent Progress in Modeling and Simulation for EMC	Prof. Francesca Maradei, *Sapienza University of Rome, Italy*
SS-5	Numerical modeling for complex EMC systems	Prof. Ji Chen, *University of Houston, USA,* Dr. Bruce Archambeault, *IBM，USA*
SS-6	Effects and Protection of Intentional Electromagnetic Interference	Dr. William Radasky, *Metatech Corporation, Goleta, California, USA,* Prof. Wen-Yan Yin, *Zhejiang University, China*
SS-7	EMC in mobile phones	Dr. Huang Jingyu, *Nokia Mobile Phone Device R&D Beijing, China*
SS-8	Automotive EMC - EMC Solutions for New Automotive Technologies	Prof. Stephan Frei, *Technische Universität Dortmund, Germany*
SS-9	Modeling and Analysis of Packaging Structures for EM Reliability	Dr. Ivan Ndip, *Fraunhofer IZM, Germany*
SS-10	Biomedical EMC	Dr. C.-K. Chou, *Motorola Inc. USA,* Prof. Ji Chen, *University of Houston, USA,* Prof. Osamu Fujiwara, *Nagoya Institute of Technology, Japan* Prof. Jianqing Wang, *Nagoya Institute of Technology, Japan*
SS-11	ESD and Transients	Prof. David Pommerenke, *Missouri University of Science and Technology, USA,* Prof. Osamu Fujiwara, *Nagoya Institute of Technology, Japan,* Dr. Ken Kawamata, *Hachinohe Institute of Technology, Japan*
SS-12	Signal and Power Integrity for Multi-Gbps Digital Circuits	Prof. Jun Fan, *Missouri University of Science and Technology, USA,* Prof. Antonio Orlandi, *University of L'Aquila, Italy,* Dr. Bill Chen, *Cisco, USA*
SS-13	EMC Research and Development in Taiwan	Prof. Ching-Wen Hsue, *National Taiwan University of Science and Technology, Chinese Taipei*
SS-14	Overview of EMC in Europe	Prof. Marcello D'Amore, *University of Rome Sapienza, Italy*
SS-15	Model Validation for EMC Simulations	Prof. Franz Schlagenhaufer, *The University of Western Australia, Australia*
SS-16	EMC and Solution of Power Electronics	Prof. Zhengming Zhao, *Tsinghua University, China*
SS-17	Electromagnetic Environment of Power System	Prof. Xiang Cui, *North China Electric Power University, China,* Dr. W. H. Siew, *University of Strathclyde, UK,* Prof A.P.J. van Deursen, *Eindhoven University of Technology, Netherlands*
SS-18	Advances on Radiated Measurements	Dr. Zhong Chen, *ETS-Lindgren, USA*
IF-1	Emission Measurements - Novel and Alternative Methods	Dr. Stephan Braun, *GAUSS Instruments GmbH, Germany*
TM-1	Topical Meeting on Lightning Protection	Prof. Vladimir A. Rakov, *University of Florida, USA,* Dr. S. Yokoyama, *Central Research Institute of Electric Power Industry (CRIEP), Japan,* Prof. Farhad Rachidi, *Swiss Federal Institute of Technology- Lausanne, Switzerland*
TM-2	Topical Meeting on Advanced research in EMC of Ics	Dr. Sonia Ben Dhia, *INSA de Toulouse, France,* Dr. Thomas Steinecke, *INFINEON, France*

Tutorials/Workshops

ID	Topic Ttile	Co-chairs
WS-1	Power Distribution Network Design for High-Speed Digital Circuits,	Dr. Jun Fan, Prof. James L. Drewniak, Prof. David Pommerenke, *Missouri University of Science and Technology, USA*
WS-2	Electromagnetic Bandgap Structures for Power/Signal Integrity in High-Speed Digital Boards	Prof. Antonio Orlandi, *University of L'Aquila, Italy;* Prof. Tzong-Lin Wu, *National Taiwan University, Chinese Taipei*; Dr. Antonio Ciccomancini Scogna, *CST of America, Inc., USA*
WS-3	Electronic package signal integrity and EMI modeling	Dr. Er-Ping Li, A*STAR IHPC, *Singapore;* Dr. Klaus Krohne, *CST AG, Germany*
WS-4	Achieving EMC to Help Control Functional Safety Risks	Mr. Keith Armstrong, *Cherry Clough Consultants, UK;* Dr. William A Radasky, *Metatech Corporation, USA;* Dr. Jacques DeLaballe, *Schneider Electric Industries, France*
WS-5	Radio Frequency Exposure Safety Concerns: Research, Standards, Regulatory Status and Risk Communication	Dr. C. K Chou, *Motorola, USA;* Michael Milligan, *Mobile Manufacturers, Hong Kong*
WS-6	Lightning, earthing and EMC	Dr. WH Siew, *University of Strathclyde, UK;* Prof. JM Van Coller, *University of the Witwatersrand, South Africa*
WS-7	EMC, EMR and SAR - Approvals and Requirements for Marketing in Australia	Mr. Chris Zombolas, *EMC Technologies Pty Ltd, Australia*
WS-8	The Latest Status of Telecoms and EMC Regulations in South East Asia	Dr. Junhong DENG, *TÜV SÜD PSB, Singapore*
WS-9	Global Testing Requirements for Telecommunication Equipment	Dr. Perry Wilson, *NIST, USA;* Mr. Guo Lin, *Telecommunication Metrology Center of MIIT, China,* Dr. Kefeng Liu, *ETS-Lindgren, USA*
WS-10	Numerical Inversion of Laplace Transform: Its Theory and Application in Transient Analysis of Electromagnetic Pulses	Dr. Qingsheng Zeng, *Communications Research Centre Canada*
WS-11	New Development of Hardware Acceleration Techniques In Computational Electromagnetic Engineering	Dr. Wenhua Yu, *2COMU, USA*
WS-12	Time Domain Measurement Technique	Dr. Boris Levitas, Geozondas Ltd, Lithuania
WS-13	The Multi-Functional Frequency Domain Antenna Measurement Systems	Dr. George Cheng, Allwave Corporation
WS-14	The Non-intrusive high precision field mapping technique-Optically Modulated Scatterer	Dr. Wenlie Liang, Quietek Corporation
T-1	Global EMC Compliance Fundamentals	Dr. Kefeng Liu, *ETS-Lindgren, USA;* Mr. Wu Fan, *National Institute of Metrology, China;* Mr. Homber Wang, *Telecommunication Metrology Center of MIIT, China*
T-2	Electromagnetic Fundamentals for the EMC Engineer	Dr. Franz Schlagenhaufer, *The University of Western Australia, Australia*
T-3	Initiation to the modeling and simulation of electromagnetic compatibility of integrated circuits	Dr. Alexandre Boyer, Dr. Sonia Ben Dhia, *INSA de Toulouse, France*
T-4	Personal Development through Engineering Excellence	Mr. Brian F Lawrence, *iNARTE, Inc.New Bern NC, USA*
T-5	T5: Printed Circuit Board and System Design for Technology of the Future	Mark Montrose, *Montrose Compliance Services, Inc. USA;* Edward Nakauchi, *G & M Compliance, Inc. USA*
T-6	Grounding Fundamentals and Application from Circuit to System	Dr. Elya Joffe, *K.T.M. Project Engineering, Israel*
T-7	Microwave Integrated Circuits Design-Essentials	Prof. S. Raghavan, *National Institute of Technology, Trichy, INDIA*

Note: WS-Workshop; T- Tutorial

Time Table of Tutorials & Workshops Program AMPEMC2010

Room	Time	Monday, 12 April, 2010	Time	Friday, 16 April, 2010
Room 305B	9:00am-12:30pm	WS-1: Power Distribution Network Design for High-Speed Digital Circuits **Jun Fan, James L. Drewniak, David Pommerenke, USA**	9:00am-12:30pm	T-5: Printed Circuit Board and System Design for Technology of the Future, **Mark Montrose, Edward Nakauchi, USA**
	1:30pm-4:00pm	WS-2: Electromagnetic Bandgap Structures for Power/Signal Integrity in High-Speed Digital Boards, **Antonio Orlandi, Italy; Tzong-Lin Wu, Taiwan; Antonio Ciccomancini, Italy**		
	4:30pm-6:00 pm	WS-3: Electronic package signal integrity and EMI modeling, **Er-Ping Li, Singapore; Klaus Krohne, Germany; Dr. David P. Johns, USA**		
Room 305C	9:00am-3:00pm	T-1: Global EMC Compliance Fundamentals **Kefeng Liu, ETS-Lindgren, USA; Wu Fan, National Institute of Metrology, China; Homber Wang, Telecommunication Metrology Center of MIIT, China**	9:00am-11:00pm	T-6: Grounding Fundamentals and Application from Circuit to System, **Elya Joffe, Israel**
	3:30pm-6:00pm	T-2: Electromagnetic Fundamentals for the EMC Engineer, **Franz Schlagenhaufer, Australia**	11:00am-11:45am	WS-7: EMC, EMR and SAR - Approvals and Requirements for Marketing in Australia, **Chris Zombolas, EMC Technologies Pty Ltd, Australia**
			11:45am-12:30pm	WS-8: The Latest Status of Telecoms and EMC Regulations in South East Asia, **Junhong DENG, TÜV SÜD PSB, Singapore**
Room 307	9:00am-12:30pm	WS-4: Achieving EMC to Help Control Functional Safety Risks, **Keith Armstrong, UK; William A Radasky, USA; Jacques DeLaballe, France**	9:00am-12:30pm	WS-9: Global Testing Requirements for Telecommunication Equipment **Perry Wilson, NIST, USA; Guo Lin; Telecommunication Metrology Center of MIIT, China; Kefeng Liu, ETS-Lindgren, USA**
	1:30pm-3:30pm	WS-5: Radio Frequency Exposure Safety Concerns: Research, Standards, Regulatory Status and Risk Communication, **C. K Chou, Motorola, USA; Michael Milligan, Mobile Manufacturers, HK**		
	3:45pm-5:45pm	WS-6: Lightning, earthing and EMC **WH Siew, University of Strathclyde, UK; JM Van Coller, South Africa**		
Room 308	09:00am-05:30pm	T-4: Personal Development through Engineering Excellence **Brian F Lawrence, Executive Director, iNARTE, Inc. New Bern NC, USA**	9:00am-10:20am	T-7: Microwave Integrated Circuits Design-Essentials, **S.Raghavan, National Institute of Technology, Trichy, INDIA**
			10:30am-11:30pm	WS-10: Numerical Inversion of Laplace Transform: Its Theory and Application in Transient Analysis of Electromagnetic Pulses, **Qingsheng Zeng, Canada**
			11:30am-12:30pm	WS-11: New Development of Hardware Acceleration Techniques In Computational Electromagnetic Engineering, **Wenhua Yu, 2COMU, USA**
Room 305A	9:00am-5:30pm	T-3: Initiation to the modeling and simulation of electromagnetic compatibility of integrated circuits, **Alexandre Boyer, Sonia Ben Dhia, INSA de Toulouse, France**		
Room 303	1:30-3:30pm	WS-12: Time Domain Measurement Technique, **Boris Levitas, Geozondas Ltd, Lithuania**		
	3:30-4:45pm	WS-13: The Multi-Functional Frequency Domain Antenna Measurement Systems **George Cheng, Allwave Corporation**		
	4:45-5:30pm	WS-14: The Non-intrusive high precision field mapping technique-Optically Modulated Scatterer **Wenlie Liang, Quietek Co**		

Description of Tutorials and Workshops

Workshop 1:	**Power Distribution Network Design for High-Speed Digital Circuits**
Time:	9:00am-12:30pm, Monday, 12 Apr. 2010, Room 305B
Organizers:	Dr. Jun Fan, and Prof. James L. Drewniak, Prof. David Pommerenke, USA Missouri University of Science and Technology, USA

Dr. Jun Fan 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 as a Consultant Engineer. In July 2007, he joined the Missouri University of Science and Technology and is currently an Assistant Professor with the EMC Laboratory. His research interests include signal integrity and EMI designs in high-speed digital systems, dc power-bus modeling, intra-system EMI, and RF interference. Dr. Fan served as the Chair of the IEEE EMC Society (EMCS) TC-9 Computational Electromagnetics Committee from 2006 to 2008, and was an EMCS Distinguished Lecturer in 2007 and 2008. He currently serves as the Vice Chair of the EMCS Technical Advisory Committee. Dr. Fan received an IEEE EMC Society Technical Achievement Award in 2009.

Prof. James L. Drewniak received B.S., M.S., and Ph.D. degrees in electrical engineering from the University of Illinois at Urbana-Champaign in 1985, 1987, and 1991, respectively.
He joined the Electrical Engineering Department at Missouri University of Science and Technology (formerly University of Missouri-Rolla) in 1991 where he is a faculty member in the Electromagnetic Compatibility Laboratory, and a Curators' Professor of Electrical and Computer Engineering. His research and teaching interests include electromagnetic compatibility in high-speed digital and mixed-signal designs, signal and power integrity, electronic packaging, electromagnetic compatibility in power electronic based systems, electronics, and antenna design.
Dr. Drewniak is an IEEE Fellow, and an Associate Editor for the IEEE Transactions on EMC.

Dr. David Pommerenke research interests are system level ESD, 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 University Missouri Rolla in 2001 where he is a tenured professor now. He has published more than 100 papers and is inventor on 10 patents. He has been distinguished lecturer for the IEEE EMC Society in 06/07.

Abstract:

Cover the fundamental issues in PDN modeling and design, targeting at EMC and Signal integrity engineers, PCB board and layout designers.

Workshop Outline:

1. **PCB Level PDN Design, Embedded Capacitance/EBG**
   Dr. Jun Fan, *Missouri University of Science and Technology, USA*
2. **Inductance Extraction and Decoupling Design, for PCB/Package Co-design**
   Prof. James L. Drewniak, *Missouri University of Science and Technology, USA*
3. **IC Transient Current and IC-level PDN Modeling**
   Prof. David Pommerenke, *Missouri University of Science and Technology, USA*

Workshop 2:	**Electromagnetic Bangap Structures for Power/Signal Integrity in High-Speed Digital Boards**
Time:	1:30pm-4:00pm, Monday, 12 Apr. 2010, Room 305B
Organizers:	Prof. Antonio Orlandi, University of L'Aquila, Italy Prof. Tzong-Lin Wu, National Taiwan University Dr. Antonio Ciccomancini Scogna, CST of America, Inc., USA

Prof. Antonio Orlandi was born in Milan, Italy in 1963. He received the Laurea degree in Electrical Engineering from the University of Rome "La Sapienza", Italy, in 1988.
He was with the Department of Electrical Engineering, University of Rome "La Sapienza" from 1988 to 1990. Since 1990 he has been with the Department of Electrical Engineering of the University of L'Aquila where he is currently Full Professor and Chair of the UAq EMC Laboratory. Author of more than 200 technical papers, he has published in the field of electromagnetic compatibility in lightning protection systems and power drive systems. Current research interests are in the field of numerical methods and modeling techniques to approach signal/power integrity, EMC/EMI issues in high speed digital systems. He is an IEEE Fellow, Chairman of the TC-10 "Signal Integrity" Committees of the IEEE EMC Society and Associate Editor of the IEEE Transactions on Electromagnetic Compatibility.

Prof. Tzong-Lin Wu received the B.S.E.E. and Ph.D. degrees from National Taiwan University (NTU), Taipei, Taiwan, in 1991 and 1995, respectively.
He is currently a Professor with the Department of Electrical Engineering and Graduate Institute of Communication Engineering, NTU. His research interests include EMC/EMI and signal/power integrity design for high-speed digital/optical systems. He has served as the chair of the Taipei Section of IEICE and the Treasurer of the IEEE Taipei Section since 2007-2009. He has served on the Board of Directors (BoD) of the IEEE Taipei Section since 2009. He is a Distinguished Lecturer of the IEEE EMC Society for the 2008–2009 terms. He actively participates in IEEE activity, and was the co-chair of the 2007 IEEE EDAPS Workshop and the chair of 2008 International workshop on EMC. He was the recipient of the Excellent Research Award and Excellent Advisor Award presented by NSYSU in 2000 and 2003, respectively, the Outstanding Young Engineers Award presented by the CIEE in 2002, Wu Ta-You Memorial Award presented by the National Science Council (NSC) in 2005, and Technical Achievement Award in IEEE EMC Society in 2009.

Dr. Antonio Ciccomancini Scogna (S'03–M'05–SM'09) received the Laura and Ph.D. degrees in electrical engineering from the University of L'Aquila, L'Aquila, Italy, in 2001 and 2005, respectively. He is currently a Principal Engineer at Computer Simulation Technology (CST) of America, Framingham, MA. His research interests include electromagnetic compatibility numerical modeling, printed and integrated circuits, electromagnetic packaging effects, signal integrity and power integrity analysis in high-speed digital systems. He has authored or coauthored more than 50 publications in IEEE journal transactions, IEEE conference proceedings, and Electronic Design Automation (EDA) magazines.
Dr. Ciccomancini is a member of Applied Computational Electromagnetic Society (ACES), Institution of Engineering and Technology (IET), EMC TC-9 and TC-10 Committees. In 2004, he received the CST University Publication Award for the use of the finite-integration technique in signal integrity applications. He is the recipient of DesignCon Finalist Best Paper Award in 2007 and DesignCon Best Paper Award in 2008.

Abstract:

a) To introduce the participants to the fundamental mechanisms of EBG structures used in high-speed digital boards, b) To offer a solid view on the innovative Photonic Crystal Layer structures and c) To discuss some applications and the relevant issues related to the numerical simulation of these structures.

Workshop Outline:

1. **Fundamental Mechanisms of Planar EBG**
   Prof. Antonio Orlandi, *University of L'Aquila, L'Aquila, Italy*

2. **Power Integrity/Signal Integrity Applications Using EBG Structures**
   Prof. Tzong-Lin Wu, *National Taiwan University*
3. **Efficient Methodologies to Model 2D/3D Electromagnetic Bandgap Streuctures**
   Dr. Antonio Ciccomancini, *CST of America, Inc., USA*

Workshop 3:	**Electronic package signal integrity and EMI modeling**
Time:	4:30pm-6:00pm, Monday, 12 Apr. 2010, Room 305B
Organizers:	Dr. Er-Ping Li, A*STAR , Singapore; Dr. Klaus Krohne, CST AG, Germany

Dr. Erping Li(S'91, M'92, SM'01, F'08) is with the Singapore National Research Institute of High Performance Computing, where he is currently the Principal Scientist and Director of Advanced Electronic Systems and Electromagnetics Dept. His research interests include computational electromagnetics, micro/nano-scale integrated circuits and electronic package , electromagnetic compatibility, signal integrity and nanotechnology.
Dr Li is a Fellow of IEEE, and a Fellow of Electromagnetics Academy, USA, Changjiang Chair Professor named by the Ministry of Education in China and an elected IEEE EMC Distinguished Lecturer. He received numerous awards He was the Associate Editor for the IEEE Microwave and Wireless Components Letters and is currently an Associate Editor IEEE Transactions on EMC. He has been a Technical Chair, Session Chair for many international conferences. He was the President and Chair for the 2006 EMC-Zurich in Singapore, and General Chair for 2008 Asia-Pacific EMC Symposium.

Dr. Klaus Krohne received his electrical engineering degree (Dipl.-Ing.) from the Darmstadt University of Technology in Germany in 2001 and is PhD Degree (Dr. sc.) from the Swiss Federal Institute of Technology in Zurich in 2007. From 2007 to 2009 he worked as a research fellow at the A*STAR Institute of High Performance Computing in Singapore. His research interests include the development of simulation codes for electromagnetic fields as well as device optimization. He is currently with Computer Simulation Technology (CST) as a Sales and Technical Support Manager based in Singapore.

Abstract:

Clock frequencies of high-speed semiconductor IC's, packages, and systems have increased over the GHz frequency range. The density of transistors per square millimeter greatly increased. More and more circuit modules designed for different purpose share the same piece of silicon in one package, such as the system-on-chip (SOC) and system-on-package (SIP). At the same time, the working frequency becomes higher and higher. These cause the electromagnetic compatibility (EMC) become a very important issue in the IC & package design. The potential EMC problems should be found and solved as early as possible to reduce the cost on the design-manufacture-test cycle. This talk will introduce the fundamental EMC and signal integrity issues of the high-frequency electronic circuits and its packaging. The key EMC problems arising from the high-speed IC& package will be discussed. The current modeling and simulation methods used for IC&package EMC problems will be presented.

Workshop Outline:

1. **Efficient Modelling and Designs for Complex Printed Circuit Boards and Electronic Packaging**
   Prof. Er-Ping Li, A*STAR IHPC, *Singapore*
2. **Compact models for the Efficient Simulation of EMC problems**
   Dr. Klaus Krohne, *CST, Germany,* ***Dr David Johns****, CST, USA*

Workshop 4:	**Achieving EMC to Help Control Functional Safety Risks**
Time:	9:00am-12:30pm, Monday, 12 Apr. 2010, Room 307
Organizers:	Mr. Keith Armstrong, Cherry Clough Consultants, UK Dr. William A Radasky, Metatech Corporation, USA Dr. Jacques DeLaballe, Schneider Electric Industries, France

Dr. Keith Armstrong graduated from Imperial College, London, in 1972 with an Honours Degree in Electrical Engineering, has been a member of the IEE/IET since 1977, a UK Chartered Engineer since 1978, a Group 1 European Engineer since 1988 and a Fellow of the IET since 2010.
After working as an electronic designer, then as project and department manager, Keith started Cherry Clough Consultants in 1990 to help companies reduce costs and timescales through the use of good EMC engineering.
Keith has presented many papers, demonstrations, and training courses on EMC, and on EMC for Functional Safety, worldwide, and written very many articles on these topics over the last 18 years.
He is currently President of the EMC Industries Association, chairs the IET's Working Group on "EMC and Functional Safety", and is the UK's authorized representative on IEC 61000-1-2 (EMC & Functional Safety), and IEC 60601-1-2 (EMC for Medical Devices).

Dr. Radasky received his Ph.D. in Electrical Engineering from the University of California at Santa Barbara in 1981. He has worked on high power electromagnetics applications for more than 41 years. In 1984 he founded Metatech Corporation in California, which performs work for customers in government and industry. He has published over 400 reports, papers and articles dealing with electromagnetic environments, effects and protection during his career. He is Chairman of IEC SC 77C and IEEE EMC Society TC-5.
Dr. Radasky is very active in the field of EM standardization, and he received the Lord Kelvin Award from the IEC in 2004 for outstanding contributions to international standardization.

Abstract:

Almost everyone assumes that the normal practices of complying with EMC standards also covers safety issues that can be affected by electromagnetic interference (EMI) - but debates about the recent spate of problems with vehicles of a famous car manufacturer have shown that this is not true.
It is very easy to show that relying on EMC testing is TOTALLY INADEQUATE where errors or malfunctions in electrical/electronic technologies (including wireless and programmable electronic) could increase functional safety risks.
The normal EMC test standards are inadequate where safety risks are to be controlled, even if the immunity test levels are increased by any amount. This means that – everywhere in the world – engineers and project managers are blissfully unaware of the functional safety risks they are not controlling, because they are relying on ordinary EMC testing, even if they are increasing the immunity test levels. IEC TS 61000-1-2 Ed.2 Dec. 2008 is the first document to describe a method that can provide confidence in achieving the target levels of functional safety risks where EMC is concerned. It has been written so that it can be used as the 'missing EMC Annex' in IEC 61508, the basic standard on Functional Safety.

Workshop Outline:

1. **A Brief Overview of the Whole Functional Safety Lifecycle (from the point of view of a safety system manufacturer)**
   Keith Armstrong, *Cherry Clough Consultants, UK*
2. **Progress in Standardization of EMC for Functional Safety since the publication of IEC TS 61000-1-2 Ed.2, Dec. 2008**
   William A Radasky, *Metatech Corporation, Inc., USA*
3. **Assessing the Lifecycle Environment (EM and physical)**
   Keith Armstrong, *Cherry Clough Consultants, UK*

4. **Risk Assessment and Creating the SRS (Safety Requirement Specification)**
   Jacques DeLaballe, *Schneider Electric SARL, France*
5. **EM Planning**
   William A Radasky, *Metatech Corporation, Inc., USA*
6. **EM-Safety Design and System Integration**
   Jacques DeLaballe, *Schneider Electric SARL, France*
7. **a) EM-Safety Verification/Validation in general**
   William A Radasky, *Metatech Corporation, Inc., USA*

   b) Testing EM for Safety
   Jacques DeLaballe, *Schneider Electric SARL, France*
8. **Maintenance; Repairs; Refurbishments; Modifications and Upgrades**
   Keith Armstrong, *Cherry Clough Consultants, UK*

Workshop 5:	**Radio Frequency Exposure Safety Concerns: Research, Standards, Regulatory Status and Risk Communication**
Time:	1:30pm-3:30pm, Monday, 12 Apr. 2010, Room 307
Organizers:	Dr C. K. Chou, Motorola, USA, Michael Milligan, Mobile Manufacturers Forum, Hong Kong, PRC

Dr. C-K. Chou received the B.S.E.E. from National Taiwan University in 1968, M.S. from Washington University in 1971, and Ph.D. from the University of Washington in 1975. He was a faculty at the University of Washington during 1977-1985, a Research Scientist and Director at the City of Hope National Medical Center in Duarte, CA during 1985-1998. In 1998, he joined Motorola as the Chief EME Scientist responsible for RF product safety. He is current Chairman of TC 95 of the IEEE International Committee on Electromagnetic Safety, responsible for exposure standards from 0 to 300 GHz. Dr. Chou has published about 200 peer-reviewed papers and book chapters, and presented 280 conference papers, and 200 invited talks. Dr. Chou received the highest honor d'Arsonval Medal from the Bioelectromagnetics Society in 2006. He is a Fellow of IEEE (1989) and the American Institute for Medical and Biological Engineering (1996), and Electromagnetic Academy (2007).

Abstract:

In this 2-hour workshop, the first topic will be on research to summarize recent epidemiological, human, animal and in vitro studies. Reviews of independent expert panels and health authorities will be discussed. To protect human health and to make measurements of RF emitting devices, exposure and assessment standards have been developed. The IEEE C95.1-2005 human exposure guidelines and IEEE C95.7-2005 RF safety program recommendations are used for limiting human exposure. The IEEE C95.1-2005 standard will be compared to the 1998 guidelines of the International Commission on Non-Ionizing Radiation Protection. Measurement standards include IEEE 1528 and IEC 62209 part 1 (characterizing mobile phone exposure in the head) and IEC 62209 part 2 (two-way radios and body worn devices). Current regulatory status in the world will be presented. Variations of exposure limits adopted by different countries reflect the political nature of this issue. The final topic on risk communication is extremely important, and will cover the latest findings with respect to the perceptions and attitudes of people, who are trusted sources of information and why, and the influence of culture and other factors on risk communications and precautionary advice. The role of consistency and the need for harmonization of RF safety standards as important elements for minimizing confusion in public concern will also be discussed.

Workshop Outline:

1. **Research and standards of Radio Frequency Exposure Safety Concerns**
   Dr. C-K. Chou, *Enterprise Mobility Solutions, Motorola Inc. Fort Lauderdale, FL, USA*
2. **Regulatory status and risk communication**
   Dr. Michael Milligan, *Mobile Manufacturers Forum, Hong Kong, China*

Workshop 6:	**Lightning, Earthing and EMC**
Time:	3:45pm-5:45pm, Monday, 12 Apr. 2010, Room 307
Organizers:	Dr WH Siew, University of Strathclyde, UK Prof. JM Van Coller, University of the Witwatersrand, South Africa Dr. Kai Sang LOCK, PAM CH, PQR Technologies Pte Ltd, Singapore, Singapore

Dr Siew is a Reader in the Department of Electronic and Electrical Engineering, University of Strathclyde, Glasgow, Scotland. He holds a B.Sc (Hons) in Electronic and Electrical Engineering; a PhD in Electrical Engineering; and a Master of Business Administration from the University of Strathclyde. He is a Chartered Engineer; a member of the Institution of Engineering and Technology, UK and of the Institution of Electronic and Electrical Engineers, USA. His research covers large systems electromagnetic compatibility; cable diagnostics; and lightning protection of aircraft and structures. He is convener of the International CIGRE Working Group on EMC within High Voltage substations and Power stations. He is also a member of the CIGRE Working Group on EMC in Telecommunication Circuits; and of the CIGRE Working Group on Lightning Protection of Power Systems. He is a member of the Technical and Advisory Panel for the IET Professional Network on Electromagnetics.

Dr John Van Coller graduated from the University of the Witwatersrand, Johannesburg, South Africa, in 1975, and shortly thereafter joined the staff at the same university, where he now holds the position of Senior Lecturer. He is the joint leader of the Lightning/EMC research group at this university and has worked on numerous lightning and EMC-related projects for the local industry, train operators, mines and utilities. He has presented very popular courses to the local industry in the areas of lightning, earthing and EMC, and at the university presents undergraduate and postgraduate courses on power electronics, power systems, insulation coordination and power quality. He is a member of the Cigre Working Group C4.208 concerned with utility EMC issues and has contributed towards the South African NRS083 EMC standards.

Dr. Lock is a practicing professional engineer and the Director of PQR Technologies Pte Ltd, Singapore. His specializes in the areas of power quality, EMC, lightning protection, motor drives and mission-critical electrical design.
He received both his B.Sc. and PhD degrees from the University of Strathclyde, in 1975 and 1979 respectively. He was a faculty at National University of Singapore from 1980 to 1997. He was the Chairman of Singapore Standards Council for 6 years, responsible for Standards and Codes of Practice in Singapore. He is a Past President of the Institution of Engineers, Singapore, a Past Chairman of the IEE, Singapore Centre and founding Chairman of IEEE Power Chapter, Singapore. He was a Board Member of Professional Engineers Board, Singapore and Chairman of Engineering Accreditation Board for 8 years.
He is co-author of "Grounds for Grounding: A Circuit to System Handbook" published by IEEE/John Wiley.

Abstract:

In many areas of the world, lightning is a major problem and requires installation of an external lightning protection system and an internal lightning protection system, perhaps using the IEC 62305 suite of international standards. The EMC issues must also be clearly understood as it is also important that the measures taken to provide protection against lightning are also optimized for EMC. The role of earthing for both lightning protection as well as for EMC is also discussed.

Workshop Outline:

1. **Lightning, Earthing and EMC**
   Dr. J Van Coller, *University of the Witwatersrand, Johannesburg, South Africa*
2. **Pitfalls in Grounding and Bonding for Lightning and Surge Protection**
   Dr. Kai Sang LOCK, PAM CH, *PQR Technologies Pte Ltd, Singapore, Singapore*

Workshop 7:	**EMC, EMR and SAR - Approvals and Requirements for Marketing in Australia**
Time:	11:00am-11:45am, Friday, 16 Apr. 2010, Room 305C
Organizer:	Dr. Chris Zombolas, EMC Technologies Pty Ltd, Australia

Dr. Chris Zombolas is Technical Director and founder of EMC Technologies Pty Ltd, an internationally recognised NATA accredited Test House with laboratories in Melbourne, Sydney, Brisbane and Auckland (NZ), specialising in EMC, EMR, SAR, Safety and Radiocoms testing and approvals. He has 37 years experience in the defence, aerospace and commercial electronics industries, with the last 30 years concentrated in the EMI/EMC discipline. He is an authorised EMC Competent Body assessor for C-tick and NATA signatory for EMC, EMR and SAR testing. He is the EMC representative of the Electrical Compliance Testing Association of Australia, former member of Standards Australia EMC and EMR committees, a member of the ACMA Techhnical Working Group in the area of technical regulations and was a member of the former Radiocommunications Consultative Committees that advised the Australian government on the Implementation of the EMC and EMR Regulations.

Abstract:

Most electrical/electronic products must comply with EMC regulations and be labelled with the C-tick or A-tick before they can be legally sold in Australia. Devices incorporating transmitters must comply with Electromagnetic Radiation (EMR) regulations. In many cases, handheld or portable transmitters must comply with limits for Specific Absorption Rate (SAR). This workshop will explain the EMC, EMR and SAR regulatory requirements and applicable test standards for testing, labelling and record keeping for the legal marketing of electrical/electronic products in Australia.

Workshop 8:	**The Latest Status of Telecoms and EMC Regulations in South East Asia**
Time:	11:45am-12:30pm, Friday, 16 Apr. 2010, Room 305C
Organizer:	Dr. Junhong DENG, TÜV SÜD PSB, Singapore

Dr. Deng grated from Beijing Jiaotong University with a Bachelor and Master degree in Electrical Engineering, and from Nanyang Technological University (Singapore) with a Master degree in Electrical and Electronic Engineering and a Ph.D degree. Currently, Dr. Deng is the vice president of TÜV SÜD PSB and the EMC Senior Product Specialist of TÜV SÜD, his expertise is mainly in laboratory management, business development, EMC consultancy, EMC design, EMC testing and certification. Additionally, he is the deputy chairman of IEEE Singapore EMC chapter, an IEEE senior member, a member of IECEE CTL EMC Expert Task Force, a member of Singapore EMC standards technical committee and an iNARTE certified EMC engineer. Prior to joining TÜV SÜD PSB in 1998, Dr. Deng was an lecturer with East China Jiaotong University in 1987 – 1994 and a senior R&D engineer with Mitsubishi Electric in 1996-1998.

Abstract:

This talk will give audience a full picture of testing and certification requirements in ASEAN (Association of Southeast Asian Nations). The contents cover the latest status and development of the ASEAN EE MRA (Mutual Recognition Agreement for electrical and electronic equipment), ASEAN Telecoms MRA (Mutual Recognition Agreement for Telecommunication equipment), as well as the Telecoms and EMC regulations in south east Asia countries such as Singapore, Malaysia, Indonesia, Philippines, Thailand, Brunei, Vietnam and Myanmar.

Workshop 9:	**Global Testing Requirements for Telecommunication Equipment**
Time:	9:00am-12:30pm, Friday, 16 Apr. 2010, Room 307

Organizers: Dr. Perry Wilson, NIST, USA
Guo Lin, Telecommunication Metrology Center of MIIT, China
Dr. Kefeng Liu, ETS-Lindgren, USA

Dr. 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 joined the Electromagnetics Division at the National Institute of Standards and Technology (then NBS) in 1983 as a National Research Council Postdoctoral Fellow and became a regular NIST staff member in 1985. In 1987 he took a position with Asea Brown Boveri and then in 1999 he re-joined the Electromagnetics Division at NIST in Boulder, Colorado where he is currently Acting Division Chief. Dr. Wilson's research has focused on the application of electromagnetic theory to problems in electromagnetic compatibility and metrology. Dr. Wilson is a Fellow of the IEEE, a member of the IEEE EMC Society Standards Development Committee, of URSI Commission B, and of the US IEC TC77B TAG, a former Editor-in-Chief of the IEEE EMC Transactions, and a recipient of the IEEE EMC Transactions Best Paper Award in 2002.

Mr. Guo Lin is a chief engineer of TMC Beijing, also he is the manager of the OTA/FLO test lab of TMC.
With his specialist background on EMC and RF, Mr. Guo is an active member of many international technical committees. He is a Rapporteur of ITU-T SG5, member of CTIA CPWG working group, 3GPP RAN4 and CCSA TC9, also a member of the National EMC Standard Society. He is the main author of most of the telecommunication EMC and OTA standards in China, also a major contributor to some of the international standard in that area.

Dr. Kefeng Liu: See Tutorial 1 - Global EMC Compliance Fundamentals

Abstract:

Wireless technologies are the most rapidly evolving ones today. This workshop will discuss the new methods in performing wireless device certification testing according to the latest Version 3.0 Test Plan for Mobile Station Over the Air Performance published by CTIA – The Wireless Association®. In addition, emerging technologies such as MIMO and Assisted GPS (A-GPS) with related testing methods will be discussed. Global EMC test requirements on wireless products will be introduced with updates on recent developments. Finally, the technical material will also introduce the fundamental theory and EMC solutions specialized in telecommunications products.

Workshop Outline:

1. **NIST Research and Development on Wireless Testing Using the Reverberation Technique**
   Christopher Holloway, *NIST, USA*
2. **Over-The-Air Performance Test Method for Wireless Product Certification Testing According to the latest CTIA and WiMAX Forum® Test Plans Including Evolving MIMO Testing Using the Multiple Antenna Test Method**
   Kefeng Liu, *ETS-Lindgren, L. P. USA.*
3. **Global Certification Update on Telecommunication Products and Future MIMO EMC Compliant Test Considerations**
   Guo Lin, *the Telecommunication Metrology Center of Ministry of Information Industry and Technologies, China*
4. **EMC Design Solutions on Telecommunication Equipment: Theory and Practical Applications**
   Guo Lin, *Telecommunication Metrology Center of MIIT, China*

Workshop 10:	**Numerical Inversion of Laplace Transform: Its Theory and Application in Transient Analysis of Electromagnetic Pulses**
Time:	10:30am-11:30pm, Friday, 16 Apr. 2010, Room 308

Organizer: Dr. Qingsheng Zeng, Communication Research Centre, Canada
Prof. Gilles Y. Delisle, Technology Integration Center, Technopôle Defense & Security, Canada

Dr. Qingsheng Zeng received his B. Eng. from Taiyuan University of Technology, Taiyuan, China, M. Eng. from Xidian University, Xian, China, M. Sc. from INRS – EMT, University of Quebec, Montreal, Canada, and Ph.D. from University of Ottawa, Ottawa, Canada, all in electrical engineering. He is a research engineer at Communications Research Centre Canada (CRC), and has been pursuing and leading the research projects in CRC and Industry Canada, which have been related to national and international activities. He has undertaken research and teaching in several fields, including antennas, electromagnetics, optoelectronics, wireless and speech communications, authored and co-authored more than 30 technical publications in these fields. He has been serving as an editorial member and a reviewer for a number of scientific journals, as a session organizer and chair, technical program committee member and reviewer for several international symposia.

Dr. Gilles Y. Delisle is currently Director of Technology Integration Center, Québec City, Canada. Previously, he was Vice-President Research at the International Institute of Telecommunications in Montréal, Director and Professor in the School of Information Technology and Engineering, University of Ottawa, Head and Professor of Electrical and Computer Engineering at Laval University, and Director of INRS – Telecommunications in Montréal, a research institute which is a part of the Université du Québec. Dr. Delisle is a member of the Order of Engineers of the Province of Québec and Professional Engineers of Ontario, Past-President of the Canadian Engineering Accreditation Board, Member of the Canadian Academy of Engineering, Past Canadian President of URSI, Past President of ACFAS (Association Canadienne Francaise pour l'Avancement des Sciences), and a Fellow of IEEE, of the Canadian Engineering Institute, of the Canadian Academy of Engineering and of IEE. His work in technology transfer has been recognized by a Canada Award of Excellence. He was awarded the J. Armand Bombardier prize of ACFAS for outstanding technical innovation. He has supervised the work of over a hundred graduate students and postdoctoral research fellows over the last 30 years.

Abstract:

The advancement of electromagnetic engineering has been driving the need to develop efficient time domain techniques for transient analysis of transmission, propagation and reception of electromagnetic pulses. This tutorial addresses one method based on numerical inversion of Laplace transform, which overcomes the restrictions in previous approaches on the relative dielectric constant and the incidence angle, leads to good accuracy in both late and early time, and has a simple algorithm, short calculation time, small required memory size and readily controlled error. The emphasis in this workshop is placed on how to extend and apply this method to transient analysis of reflection and transmission of pulses. The related theoretical work is described for the extension and application purposes. Correctness and effectiveness of this work are validated through the comparisons between our results and the published results. Furthermore, the results that cannot be generated with the previous approaches are also provided. In closing, the extended method is summarized with a discussion of its advantages and limitations.

Workshop Outline:

1. **Numerical Inversion of Laplace Transform: Its Theory and Application in Transient Analysis of Electromagnetic Pulses**
   Dr. Qingsheng Zeng, ***Communication Research Centre, Canada***

Workshop 11:	**New Development of Hardware Acceleration Techniques In Computational Electromagnetic Engineering**
Time:	11:45am-12:30pm, Friday, 16 Apr. 2010, Room 305C
Organizer:	Dr. Wenhua Yu, 2COMU, USA

Dr. Wenhua Yu is the CEO and founder of 2COMU (Computer and Communication Unlimited) that provides the high performance parallel EM simulation software and system. He has published over 100 technical papers, 4 book chapters and 5 books. He is a visiting professor of Pennsylvania State University. His research interests include computational EM methods, parallel processing techniques, and EM simulation techniques.

Abstract:

This workshop summarizes the new development of parallel processing techniques in the computational electromagnetic engineering. We will show the performance of parallel FDTD software on the various hardware platforms such as high performance cluster, PC cluster, multi-core processor, GPU, and IBM CELL processor for Windows and Linux operating systems. FDTD method is one of the best methods fitting to the parallel processing technique.

Workshop 12:	**Time Domain Measurement Technique**
Time:	1:30pm-3:30pm, Monday, 12 Apr. 2010, Room 303
Organizer:	Dr. Boris Levitas, Geozondas Ltd, Lithuania

Dr. Boris Levitas was born in 1947 in Vilnius, Lithuania. He received his M.Sc. degree in Vilnius University in theoretical Physics in 1969 and received his Ph.D. degree in Kaunas Polytechnic Institute in Radio Measuring Devices in 1981. After graduation of Vilnius University he was in Soviet Army as Lieutenant, Telecommunication and radio monitoring platoon leader Commander. 1971 - 1990 he worked in Vilnius Research and Development Institute of Radio-Measuring Devices in sampling oscilloscopes and UWB units design. 1988 - 1995 he was organizer and later director of company Zondas. 1995 - now President & CEO of Geozondas Ltd in Vilnius. Head of projects on UWB Sampling oscilloscopes, Ground Penetrating Radars, Time Domain measurement systems, Antenna measurement systems, RCS measurements, ISAR & SAR imaging. He is highly skilled in UWB radio electronics devises and systems, digital signal processing, electrodynamics, Time Domain measurements. Author of more than 130 scientific works.

Abstract:

To carry out measurements of objects in free space in Frequency Domain (FD) indoors the expensive anechoic chambers are necessary. Time Domain (TD) method allows to eliminate the reflections from adjacent objects. Therefore it is possible to carry out TD measurements indoors without anechoic chamber. The TD method lets to use considerably cheap signal generator and receiver than those used in FD. The presentation describes theory and techniques of microwave parameters measurements with using Time Domain Equipment. Two Time Domain measurements Systems will be demonstrated. Will be carry out Antenna Parameters measurements, ISAR Imaging, Breathing frequency measurement and etc.

Workshop 13:	**The Multi-Functional Frequency Domain Antenna Measurement Systems**
Time:	3:45pm-5:00pm, Monday, 12 Apr. 2010, Room 303
Organizer:	Dr. George Cheng, Allwave Corporation

Dr. George Cheng is President of Allwave Corporation, an aerospace company specializing in antenna and RF testing equipment, as well as microwave photography. During his thirty year career in the aerospace industry, he has been involved in several U.S. space programs while with TRW Space & Electronics Group for two decades. In the commercial sector, he was the President of Antcom Corporation from 1997 to 2007, and has served as a consultant in the

wireless communication industry for the past ten years. His professional interests include: satellite communications, antenna, RCS, EMC, imaging, and RF test systems. He received his Ph.D. from the University of California at Berkeley. His technical achievements include; a Chairman's Award for Innovation from TRW (1995), two U.S. patents on antennas and was a contributing author of an Electromagnetic book (1987) among other publications. Dr. Cheng also participates in various technical conferences across the globe, and instructs educational courses on antennas and RF test systems.

Abstract:

To carry out measurements of antennas in free space in Frequency Domain (FD), One could chose far-field measurement method as well as near field measurement method, In the near field measurement method, one can also chose a flat x-y plan scan, or a cylindrical surface scan, or a spherical surface scan. Each of these scan has advantages and disadvantages for some particular typies of antennas. The presentation describes theory and techniques of microwave parameters and measurement methods with an seven taxies multi-functional antenna measurement systems. This system is particularly suitable to small and medium size antenna development works, In combination with electromagnetic simulation software, this system can also been used for microwave holographic purposes.

Workshop 14:	**The Non-intrusive high precision field mapping technique-Optically Modulated Scatterer**
Time:	5:00pm-5:45pm, Monday, 12 Apr. 2010, Room 303
Organizer:	Dr. Wenlie Liang, Quietek Corporation

Dr. Wenlie Liang got his B.S., at the Yun-Nan University, China and his PhD at the University of Manchester, U.K. He worked as Research Scientist at the National Institute of Metrology, Beijing, China; Research Fellow at the University of Bristol, Senior Research Scientist at the National Physics Laboratory, U.K. and Research Consultant at the Center for Measurement Standards, the Industrial Technology Research Institute in Taiwan, Visiting Professor at the Qinghua University, Beijing, China, The Feng-Jia University and the Oriental Institute of Technology, Taiwan.
He is an expert on RF and Microwave measurement standards, Electromagnetic Compatibilities, Electromagnetic field distribution measurement and sensing, Optical Electro-Magnetic Field Sensors and Optical Modulated Scatterer Field mapping Technologies. He is now working as professor in the Oriental Institute of Technology as well as R&D Director at the Quietek Corporation in Taiwan.

Abstract:

To carry out measurements of objects in free space in Frequency Domain (FD) indoors the expensive anechoic chambers are necessary. Time Domain (TD) method allows to eliminate the reflections from adjacent objects. But if someone wants to know the details of 3D RF and Microwave field distribution, Both techniques run into difficulty due to the field intrusiveness of probe antenna used for these techniques. Therefore it is possible to carry out non-intrusive, high precision 3 dimensional field mapping techniques with an Optically Modulated Scatterer Field Mapping system. The presentation describes theory and techniques of microwave parameters measurements with using The Optically Modulated scatterer Techniques developed in National Physics Laboratory in UK as well as Industrial Technologies Research Institute in Taiwan, And are hopping someone within the audiences might be willing to pick it up and continuing to develop it.

Tutorial 1:	**Global EMC Compliance Fundamentals**
Time:	9:00am-3:00pm, Monday, 12 Apr. 2010, Room 305C
Organizers:	Dr. Kefeng Liu, ETS-Lindgren, USA; Mr. Wu Fan, National Institute of Metrology, China; Mr. Homber Wang, Telecommunication Metrology Center of MIIT, China

Dr. Kefeng Liu is the Director for RF Materials of ETS-Lindgren, L. P.. He dedicated his industrial career to the application of numerical electromagnetic computational methods to the analysis and design verifications of RF and microwave absorbers, anechoic chambers, and antenna designs. He is also very active in the research and development of low observable RF absorber performance, antenna measurement systems, and EMC measurement systems from 10 MHz to 110 GHz. Mr. Liu is a member of IEEE-APS/EMC and MTT societies, and Antenna Measurement Technique Associations (AMTA).

Abstract:

This workshop provides insight on global EMC compliance regulations, test and measurement requirements, and fundamental knowledge in EMC designs for suppression emissions from the devices as well as enhancing the immunity to disturbance from the operating environment. The coverage includes rules and regulations from FCC with updates on certification requirements on emerging digital equipment, as well as comprehensive coverage on the rules, regulations, and standards development activity from CISPR, ETSI, and Chinese GB. On EMC compliance test and measurement, this workshop will present the design and validation requirements for a test site, as well as the required instrumentation and validation method and procedures for both test sites and test systems. Moreover, fundamental theory and design practices will be presented to provide the understanding in EMC design and trouble-shooting tools for new EMC engineers in the field. Finally, the nano-technologies and its potential application in EMC design and application will be presented for an outlook on future EMC issues.

Tutorial Outline:

1. **FCC Certification Requirements: Update on Electronic Products**
   George Tannahill, *FCC, USA*
2. **Global EMC Standards Developments: Update on ANSI ASC C63® and CISPR**
   Xiao Li, *TMC-MITT, China*
3. **China EMC Standards and Electronic Equipment Certification Overview**
   Homber Wang, *TMC-MIIT, China*
4. **EMC Test Site Design and Validation**
   Kefeng Liu, *ETS-Lindgren, L. P., USA and Meng Donglin of NIM, China*
5. **EMC Test System Design and Validation**
   Bojun Zhang, *TMC-MITT, China*
6. **EMC Design Tutorial**
   Prof. Todd Hubing, *Clemson University, USA*
7. **Advances in Nano Technologies as Applied to EMC Design and Material Science in the Future**
   Christopher Holloway, *NIST USA.*

Tutorial 2:	**Electromagnetic Fundamentals for the EMC Engineer**
Time:	3:30-6:00pm, Monday, 12 Apr. 2010, Room 305C
Organizers:	Prof. Franz Schlagenhaufer, The University of Western Australia, Australia

Prof. Franz Schlagenhaufer studied Electric Engineering at the Technical University Munich,

and then was a PhD student at the Technical University Hamburg-Harburg, Germany, where he obtained a Doctorate in Engineering in 1994 with a thesis: "Field Excitation of Multiconductor Lines with Non-linear Terminations".
He was manager of an EMC laboratory in Hamburg from 1992 until 1995, and Technical Manager of a small consulting company in Melbourne, Australia, from 1996 until 1999.
He was Senior Research Fellow at The University of Western Australia, Perth from 2000 until 2009, where his topics of interest were computer simulation of PCBs and shielding enclosures.
Since March 2010 he is a Senior Research Engineer with the Curtin Institute of Radio Astronomy at Curtin University of Technology, Perth, where is working on EMC for some major Antenna Array Projects currently built in Western Australia.
He is a member of the National Council of the EMC Society of Australia, and a member of the Australian Standardisation committee for EMC.

Abstract:

The tutorial will focus on EMC principles and design guidelines for the equipment level. It avoids the mathematical ballast of electromagnetic theory lectures, but still emphasizes the correlation between currents and electromagnetic fields. Construction and installation guidelines can then be derived from a sound theoretical basis and tailored to the particular application.

Grounding, Shielding, Filtering, and Wiring are the fundamental design criteria to achieve EMC on the equipment level. Applying rules for grounding and routing of internal are typically very cost-effective EMC measures, if planned early during the design cycle. Shielding and filtering can add significantly to the costs if considered too late. The workshop will address: Coupling between cables and how to reduce it; Selection and installation of filters and ferrites; Shielding degradation due to openings and how to minimise their adverse effect; Grounding of cable shields for low and high frequencies, for analogue and digital signals.

This workshop will give a thorough understanding of fundamental EMC measures and allow their optimum implementation in individual cases, without ending up with costly EMC overkill solutions. Only when seen in a context of basic electromagnetic theory most of the EMC measures and make sense; the workshop will raise the awareness for this fact and explain, not so much the 'what to do' but more the 'why' of certain design rules.

Tutorial Outline:

1. **Electromagnetic principles and their application to EMC design issues**
   Prof. Franz Schlagenhaufer, *School of Electrical, Electronic and Computer Engineering, The University of Western Australia, Australia*
2. **EMC design case studies**
   Dr. Hongmei Fan, *Western Australian Telecommuncations Research Institute (WATRI), The University of Western Australia, Australia*

Tutorial 3:	**Initiation to the Modeling and Simulation of Electromagnetic Compatibility of Integrated Circuits**
Time:	9:00am-5:30pm, Monday, 12 Apr. 2010, Room 305A
Organizers:	Dr. Alexandre Boyer and Dr. Sonia Ben Dhia, INSA de Toulouse, France

Dr. Alexandre Boyer received his engineering diploma, Masters and PhD degrees in electronics from the National Institute of Applied Sciences (INSA) in Toulouse, France, in 2004 and in 2007 respectively.
He is currently an Assistant Professor in the Department of Electrical and Computer Engineering at INSA, Toulouse. His current research interests include IC susceptibility modeling, reliability of ICs and computer aided design (CAD) tool development for electromagnetic compatibility (EMC).
Contact: alexandre.boyer@insa-toulouse.fr
Web site: http://lesia.insa-toulouse.fr/~a_boyer/

Dr. Sonia Ben Dhia received her engineering diploma in 1995, and a Ph.D. in Electronic

Design from the National Institute of Applied Sciences (INSA), Toulouse, France, in 1998. She currently holds the rank of associate professor at INSA-Toulouse, Department of Electrical and Computer Engineering, where she teaches digital electronics, IC testability and reliability, and analog and RF CMOS design. She is a member of the INSA Studies Directorate board, organizes transversal educational courses and has responsibility for internal organization. Her research interests include signal integrity in deep sub-micron CMOS ICs and electromagnetic compatibility and reliability of ICs. She has authored technical papers on signal integrity and EMC. She has also contributed to the publication of 3 books.
Contact: sonia.bendhia@insa-toulouse.fr

Abstract:

Integrated circuits (IC) constitute the source as well as the victim of electromagnetic interferences in electronic systems. Thus, circuits must respond to specific EMC specifications to ensure EMC compliance at system level. Specific modelling techniques and simulation at IC level are required to predict emission and susceptibility levels before IC fabrication to test the EMC compliance and choose appropriated EMC countermeasures.

The proposed tutorial aims at presenting the basic concepts of emission and susceptibility modelling and simulation at IC level. The workshop is not a lecture but a lab with a set of problems associated to the major issues of EMC of ICs. The lab is based on IC-EMC, software entirely dedicated to EMC of ICs and developed by the speaker of the workshop for research and training purposes (more information on IC-EMC at www.ic-emc.org).

The covered topics proposed during this tutorial are: conducted and radiated emission modelling at IC level, use of IBIS for EMC purpose, PCB and package effects on EMC, susceptibility modelling at IC level, EMC oriented design guidelines. During the inscription, the subscribers to the workshop will indicate their preferred topics to orient the speakers about the content of the lab.

Tutorial Outline:

The tutorial is given as a lab (personal Laptop is required to install the freeware IC-Emc).
Morning: introduction & common general exercises
Afternoon: advanced exercises, each participant choose one of the following topics:
□ Simulation of conducted and radiated emission from I/O switching
□ Simulation of signal integrity
□ Construction of an emission model of a digital circuit
□ Evaluation of power integrity issues using ICEM model
□ Construction of a virtual test bench to test IC immunity
The tutorial will be presented by
Prof. Alexandre Boyer (1), Prof. Sonia Ben Dhia (1), Binhong Li (1), and Mikael Deobarro (2), *(1) INSA de Toulouse, France, (2) Freescale Semiconductors*

Tutorial 4:	**Personal Development through Engineering Excellence**
Time:	9:00am-5:30pm, Monday, 12 Apr. 2010, Room 308
Organizers:	Mr. Brian F Lawrence, Executive Director, iNARTE, Inc.New Bern NC, USA

Mr. Brian Lawrence is the Executive Director at iNARTE, Inc., an independent, non-profit credentialing association, offering certification to engineers and technicians in EMC, ESD Control, Telecommunications and Product Safety Engineering. Prior to joining iNARTE in 2006, Mr. Lawrence had a 40 year career in the EMC field. He is best known as a specialist in the design and construction of Electromagnetic test chambers and held senior positions at Ray Proof Corporation, Lindgren RF Enclosures, Inc. and most recently that of Managing Director at ETS-Lindgren's UK operation. Mr. Lawrence has extensive experience in Asia, having designed EMC test chambers for many of the top electronics and automotive companies in China, Japan, India, Korea, Singapore and Thailand. Mr. Lawrence has presented a number of papers on the subject of EMC/EMI test facilities at IEEE EMC symposiums and other similar technical conferences around the world.

Mr. Joffe is V.P. of Engineering at K.T.M. He holds a B.ScEE in Electrical Engineering and is a Registered Professional Engineer, with over 25 years international experience in EMC/E3, NEMP, Lightning Protection design and numerical modeling of EMC Problems. Mr. Joffe has authored over 30 papers on EMC topics in IEEE Transactions and in the proceedings of International EMC Symposia.
Mr. Joffe is a Senior Member of the IEEE, and the Immediate Past President of their EMC Society. Mr. Joffe served as a "Distinguished Lecturer" of the IEEE EMC Society, for the years 1999 through 2000.
Mr. Joffe is a recipient of the IEEE EMC Society "Laurence G. Cumming Award for Outstanding Service", the "Honorary Life Member Award", the "Technical Achievement Award", the "Symposium Chair Award" and the IEEE "Third Millennium Medal" "…in recognition and appreciation of valued services and outstanding contributions".

Mr. Michael J. Windler is the General Manager responsible for the EMC and NEBS operation of Underwriters Laboratories Inc. in North America. Mr. Windler has a BSEE from the University of Wisconsin - Madison, and an MBA from Northwestern University. He is also a licensed Professional Engineer in the states of Wisconsin and Texas, a member of the IEEE for 25 years and a member of the American National Standards Institute Accredited Standards Committee C63. In addition Mr. Windler is Chair of the Finance Committee and a member of sub-committees 1, 6 and 8. Mr. Windler is the chairman of working group 1-13.2 on requirements for sites operating above 1 GHz and has been one of the principle researchers in this area.

Mr. Wailand Zhang is an Examining Engineer with ATCB Holdings International, and is their Technical Support Manager in China. Mr. Zhang was the EMC and RF Technical Supervisor for ATCB from 2003 to 2005, when he developed an in depth knowledge of testing requirements for ITE, ISM, Automotive EMC, SRD and Low Power Device testing. Since 2005, Mr. Zhang has been an Examining Engineer for both Unintentional and Intentional Radiators, in accordance with the FCC and IEC Standards and Regulations. Mr. Zhang is a graduate of the Shanghai Institute of Technology, a member of the IEEE, and an iNARTE Certified EMC Engineer.

Abstract:

NARTE proposes to describe our traditional Certification requirements to the symposium attendees, and to introduce several new programs that we have started in 2009:

- ✓ Associate membership for recent graduates
- ✓ Laboratory Auditor Certification
- ✓ Training Initiatives

Tutorial Outline:

9:00am - 10:30am
1. Validation of the Professional Excellence of EMC Practitioners through Certification by Brian Lawrence, iNARTE, Inc.
10:30am - 12:30pm
2. Overview of current of FCC rules for compliance by Wailand Zhang or William Graff, ATCB
1:30pm - 3:00pm
3. Introducing the new ANSI C63.10 standards for unlicensed wireless devices by Michael Windler, Underwriters labs.
3:00pm - 5:00pm
4. Top 10 EMC Design Rules for Achieving Compliance by Elya Joffe, K.T.M. Project Engineering
5:00pm - 5:30pm
5. Open Question Time. All presenters will be available to answer questions from the audience.

Tutorial 5:	Printed Circuit Board and System Design for Technology of the Future
Time:	9:00am-12:30pm, Friday, 16 Apr. 2010, Room 305B
Organizers:	Mark Montrose, Montrose Compliance Services, Inc. USA; Edward Nakauchi, G & M Compliance, Inc. USA

Mr. Mark Montrose, BS-EE, BS-CS, MS-Engineering Management, has 30 years experience in electromagnetic compatibility (EMC) specializing in system analysis and printed circuit board design and layout, plus testing, troubleshooting and certification of industrial products for CE Approval. Mark was responsible for regulatory compliance for various high technology companies in California as a systems designer, product engineer and compliance engineer. He authored four popular textbooks on EMC with many translations, including Chinese. Mr. Montrose is a sitting member of the IEEE Board of Directors (2009-2010) as Division VI Director, a long term past member of the IEEE EMC Society Board of Directors, and was a popular Distinguished Lecturer for the EMC Society. In addition, he was the first President and Champion of the IEEE Product Safety Engineering Society. He provides professional and consulting worldwide on advanced EMC aspects as well as authoring and presenting many technical papers at EMC conferences worldwide.

Mr. Nakauchi has a BSEE and MSEE. He has over forty years experience beginning with analog, power, digital design and then, in the EMI/EMC/EMP and ESD areas. He has written numerous technical papers and magazine articles as well as presented seminars on EMI/EMC/EMP/ESD topics for many companies. Mr. Nakauchi was the primary author of a shielding design guideline for the Army and was an EMI consultant to the Air Force's Space and Missile Command on their COTS program. He has also worked on the CASSPER system that is an innovative correlation analyzer. Some of the projects that he has worked on include the Space Shuttle, Global Positioning Satellite, submarines, Tesla Motors and the B-2 Bomber. He is a NARTE Certified EMC/ESD Engineer with senior membership in the IEEE and is currently a consultant with G&M Compliance.

Abstract:

This course has a focus toward hands-on or applied engineering along with fundamentals of both time- and frequency-domain aspects of system design.

Tutorial Outline:

1. **Printed Circuit Board Design Concerns for EMC Compliance and Signal Integrity**
   Mark Montrose, *Montrose Compliance Services, Inc., USA*

2. **Recent Advances in Grounding, Shielding, Filtering, Integrated Circuits and Testing**
   Edward Nakauchi, *G & M Compliance, Inc., USA*

Tutorial 6:	Grounding Fundamentals and Applications from Circuits to Systems
Time:	9:00am-11:00pm, Friday, 16 Apr. 2010, Room 305C
Organizers:	Mr. Elya Joffe, K.T.M. Project Engineering, Israel

Mr. Joffe is V.P. of Engineering at K.T.M. He holds a B.ScEE in Electrical Engineering and is a Registered Professional Engineer, with over 25 years international experience in EMC/E3, NEMP, Lightning Protection design and numerical modeling of EMC Problems. Mr. Joffe has authored over 30 papers on EMC topics in IEEE Transactions and in the proceedings of International EMC Symposia.
Mr. Joffe is a Senior Member of the IEEE, and the Immediate Past President of their EMC Society. Mr. Joffe served as a "Distinguished Lecturer" of the IEEE EMC Society, for the years 1999 through 2000.
Mr. Joffe is a recipient of the IEEE EMC Society "Laurence G. Cumming Award for

Outstanding Service", the "Honorary Life Member Award", the "Technical Achievement Award", the "Symposium Chair Award" and the IEEE "Third Millennium Medal" "…in recognition and appreciation of valued services and outstanding contributions".

Abstract:

One of the problems with grounding is the term itself... it's too vague; Often a single ground may serve multiple needs, with different rule to each". The concept of "grounding" is probably among the most important, yet less understood topic of electronic design, often considered as "black magic". Yet, grounding forms an inseparable part of all electronic and electrical designs, from circuit through system up to installation design. Grounding is implemented for EMC and ESD protection, for safety purposes, for lightning and surge protection, etc. This presentation is intended to shed some light on the concepts and pitfalls associated with grounding - an essential and inseparable concept in EMC design.

The presentation will cover the rational and fundamental concepts of grounding and its topologies, leading to the implementation of grounding from circuit to system. Practical applications will be extensively discussed. Practical solutions to practical problems, as well as "real life case studies" are used as examples.

Tutorial 7:	**Microwave Integrated Circuits Design- Essentials**
Time:	9:00am-10:20am, Friday, 16 Apr. 2010, Room 308
Organizers:	Prof. S. Raghavan, National Institute of Technology, Trichy, INDIA

Dr. S. Raghavan is a senior Professor(about THIRTY years of Experience) in Electronics and Communication Engineering Department, National Institute of Technology, Trichirappalli, INDIA. He Did Ph.D. in I.I.T. Delhi under the guidance of Prof.Bharathi Bhat and Prof.S.K.Koul. The Thesis is on Coplanar waveguide discontinuities. His specialization include Microwave Engineering, Microwave Imntegrated Circuits. Professional interests are Microwave Integrated circuits, Biological effect of Microwaves, Metameterials, Computer Aided Design of M.I.C.s., RF MEMS, BioMEMS. He received BEST TEACHER AWARD for the year 2007-2008. Referee in IEEE (MTT) , PIERS and IETE.Short term visiting fellow in California State University, North Ridge(CSUN), USA. His publications include 28 International Journals, 29 IEEExplore, 2 National journals and 75 International conferences.Projects in MICS and Optical Fibres, RF MEMS, TELEMEDICINE have been done.Workshops on MIC components, Microwave Integrated Circuits, Gigital Libraray have been conducted. Dr.S.Raghavan is a Senior Member in IEEE(MTT).

Abstract:

Microwave Engineering was considered a war time secrecy till second world war and it was just after the GOLDEN PERIOD (1935-1945) of Microwaves, its applications started encompassing the non-military fields as well. Since then, the entire Microwave field has undergone tremendous revolution and gone through a sea change. Planar transmission lines are the back bones of Microwave Integrated Circuits (M.I.C.s). Stripline (Barrett and Barnes) was the first planar transmission line proposed in 1951. Microstrip followed it in the next year. Then came Slot line (S.B.Cohn-1968), Coplanar Waveguide (C.P.Wen -1969) and then Fin line (Meir). Lumped equivalents of distributed theory of Microwaves play a vital role in the design of Microwave Integrated Circuits. This simple phenomena along with the computer applications make everyone, especially the student community (who normally have aversion towards MICROWAVES) come forward to design the M.I.C. components and their integration will make the System design automatically done. Starting from the Basic principles of Microwave circuit theory, the usage of computer aided design (without using commercial software), design of the components, drawing of the layout till the complete formation will be dealt. At the end one should be able to design any microwave component in any planar transmission line of interest. In short a generalized universal design of M.I.C. components will be dealt with.

Time Table of APEMC2010 Oral Technical Sessions

Room	Room 303	Room 305A	Room 305B	Room 305C	Room 308	Room 307
Tuesday 8:40-10:20	TU-AM-A1 SS-10A	TU-AM-B1 TC-1	TU-AM-C1 SS-6A	TU-AM-D1 SS-1A	TU-AM-F1 TC-7A	TU-AM-E1 TC-4
	Biomedical EMC	EMC Management	Effects and Protection of Intentional Electromagnetic Interference	EMC Test and Measurement	System-Level EMC and PCB EMC	Electromagnetic Environment
	TU-AM-2 (Meeting Hall 2, Second Floor)					
Tuesday 10:40-12:20	Opening ceremony and Plenary talks (Chair: Erping Li)					
Tuesday 1:20-3:20	TU-PM-A1 SS-10B	TU-PM-B1 TC-9 A	TU-PM-C1 SS-5	TU-PM-D1 SS-16	TU-PM-F1 SS-12	TU-PM-E1 TC-3A
	Biomedical EMC	Antenna and Propagation Issues	Numerical Modeling for Complex EMC Systems	EMC and Solution of Power Electronics	Signal and Power Integrity for Multi-Gbps Digital Circuits	Topical Meeting on Lightning Protection
Tuesday 3:40-6:00	TU-PM-A2 SS-7	TU-PM-B2 TC-12	TU-PM-C2 TC-13A	TU-PM-D2 SS-1B	TU-PM-F2 TC-11	TU-PM-E2 TC-3B
	EMC in Mobile Phones	Communication EMC	Computational Electromagnetics	EMC Test and Measurement	Power Integrity and Signal Integrity	Topical Meeting on Lightning Protection
Wednesday 8:40-10:20	WE-AM-1 (Meeting Hall 2, Second Floor)					WE-AM-E1
	Plenary talks (Chair: Todd Hubing)					TC-3C Topical Meeting on Lightning Protection
Wednesday 10:40-12:20	WE-AM-A2 TC-17A	WE-AM-B2 SS-11A	WE-AM-C2 TC-13B	WE-AM-D2 SS-18A	WE-AM-F2 SS-9	WE-AM-E2 TC-3D
	Biomedical Electromagnetics	ESD and Transients	Computational Electromagnetics	Advances on Radiated Measurements	Modeling and Analysis of Packaging Structures for EM Reliability	Topical Meeting on Lightning Protection
Wednesday 1:20-3:20	WE-PM-A1 TC-17B	WE-PM-B1 TC-15	WE-PM-C1 SS-4A	WE-PM-D1 TC-2A	WE-PM-F1 TC-7B	WE-PM-E1 TC-3E
	Biomedical Electromagnetics	Microwave electronics and Components	Recent Progress in Modeling and Simulation for EMC	EMC Measurement Techniques	System-Level EMC and PCB EMC	Topical Meeting on Lightning Protection
Wednesday 3:40-5:40	WE-PM-A2 TC-5	WE-PM-B2 SS-11B	WE-PM-C2 SS-4B	WE-PM-D2 TC-8	WE-PM-F2 TC-10	WE-PM-E2 TC-3F
	High Power EMC	ESD and Transients	Recent Progress in Modeling and Simulation for EMC	Transportation and Automotive EMC	Electronic Packaging and Integration EMC	Topical Meeting on Lightning Protection
Thursday 8:40-10:20	TH-AM-A1 SS-8	TH-AM-B1 SS-6B	TH-AM-C1 SS-2A	TH-AM-D1 IF-1	TH-AM-F1 TC-16A	TH-AM-E1 SS-14
	Automotive EMC - EMC Solutions for New Automotive Technologies	Effects and Protection of Intentional Electromagnetic Interference	Recent Progress in EMC Numerical Modeling	Emission Measurements - Novel and Alternative Methods	Topical Meeting on Advanced research in EMC of Ics	Overview of EMC in Europe
Thursday 10:40-12:20	TH-AM-A2 SS-17	TH-AM-B2 SS-18B	TH-AM-C2 SS-2B	TH-AM-D2 SS-1C	TH-AM-F2 TC-16B	TH-AM-E2 TC-14
	Electromagnetic Environment of Power System	Advances on Radiated Measurements	Recent Progress in EMC Numerical Modeling	EMC test and measurement	Topical Meeting on Advanced research in EMC of Ics	Nanotechnology in EMC
Thursday 1:20-3:20	TH-PM-A1 SS-13A	TH-PM-B1 TC-6	TH-PM-C1 TC-13C	TH-PM-D1 TC-18	TH-PM-F1 TC-16C	TH-PM-E1 TC-3G
	EMC Research and Development in Taiwan	Power System EMC	Computational Electromagnetics	EMC Material	Topical Meeting on Advanced research in EMC of Ics	Topical Meeting on Lightning Protection
Thursday 3:40-5:40	TH-PM-A2 SS-13B	TH-PM-B2 TC-9B	TH-PM-C2 SS-3	TH-PM-D2 TC-2B	TH-PM-F2 TC-16D	TH-PM-E2 TC-3H
	EMC Research and Development in Taiwan	Antenna and Propagation Issues	EMC Computer Modeling and Simulation	EMC Measurement Techniques	Topical Meeting on Advanced research in EMC of Ics	Topical Meeting on Lightning Protection

Time Table of
APEMC2010 Open Forum Technical Sessions

Time	ID	Three Level Platform
Tuesday 1:20-3:20pm	OF-1	Open Forum-1: Best Student Paper Prize Competition
Wednesday 10:20-12:20am	OF-2	Open Forum-2: Microwave, Communication and Antenna
Wednesday 1:20-3:20pm	OF-3	Open Forum-3: System-level EMC and Computational Electromagnetics
Thursday 10:20-12:20am	OF-4	Open Forum-4: Lightning Physics and Protection
Thursday 1:20-3:20pm	OF-5	Open Forum-5: Electromagnetic Measurement, EME and Bio- Electromagnetics

Industrial Forum

Emission Measurements - Novel and Alternative Methods

Chair: Dr. Stephan Braun, *GAUSS Instruments GmbH, Munich, Germany*

1. Progress in International EMC Standardization

Stephan BRAUN, GAUSS Instruments

Recent and current changes in International standards. The new detectors CISPR-Average, CISPR-RMS-Average. The APD Measuring Function - Measurement and Interpretaton. Inclusion of the FFT-based measuring Instrument.

2. Significance of correct dwell time during emission measurements

Stephan BRAUN, GAUSS Instruments

The standards CISPR 16-2-X give normative requirements for the selection of the correct dwell time during emission measurments. How is standard to be applied for EMI receivers and FFT-based measuring instruments?

3. Progress in EMI Instrumentation and Emission Measurements

Christian HOFFMANN, Hassan SLIN, Peter RUSSER Munich University of Technology, Germany
Arnd FRECH, Stephan BRAUN GAUSS Instruments

Test procudures for emission measurements. Measurement of Disturbance Voltage (LISN), Disturbance Power (Absorber Clamp) , magnetic and electric field strength below and above 1 GHz.

4. Digital Services - Novel Methods to investigate the potential of interfering sources

Wolfgang WINTER , Markus HERBRIG emv GmbH

To interpret transient RF emissions and time limited interferences, the EMI Time Domain Measurement Systems can be used to capture such measurement data. The analysis of the digitized time domain data in the frequency domain, using broadband measurement techniques, provides an insight view to understand the root cause of interfering electronic components and the corresponding physical mechanisms. The technology trends especially in the field of public mobile RF communications using digital modulation schemas, low RF transmission levels and frequency hopping algorithms, create new interference drawbacks. Such interferences are also driven by the latest global approach to convert the last analogue frequency sectors to be used by new digital services with much smaller interchannel spacing. The lower radiated power of digital Services (GSM, UMTS, WLAN, Bluetooth, DVB-T, DAB+) and for example the increased input sensitivity of car receivers are also in conflict with the introduction of new power electronics (Hybrid Drive) in the vehicle. Additional comfort options (servo motor supported electric hatch door, fully electric air-condition with servo control, etc.) like the introduction of Bluetooth for mobile phones, direct Internet access and car internal WLAN applications deteriorate the useable SN ratio to extract or to demodulate the wanted signal. The EMI Time Domain Measurement Systems are a powerful to measure and analyze such RF emissions.

Plenary Speech

Opportunities and Challenges of TD-SCDMA and TD-LTE

Dr. Jing Wang

Secretary-General and Senior Advisor of TD Forum, Beijing, China

Date/Time: Tuesday 13 April 2010/ 11:00 – 11:40
Venue: Meeting Hall 2

Dr. Wang Jing received his Bachelor Degree in the Mathematics Department of Beijing University from 1980 to1984. He went to the U.S. to study Computer Sciences in the University of Texas (Dallas, TX, USA) from 1992 to 1994 and received his Master' s Degree of Computer Science. He also studied in Southern Methodist University from 1989–1993 and was awarded the doctoral degree in Applied Mathematics.

During 1994-2003, Dr. Wang worked in Nortel Networks (Dallas, TX, USA) and held the posts of System Engineering Designer / Manager / Sr. Manager. His main area of research interest was TDMA / CDMA / GSM /3G capacity and performance engineering, wireless network design and optimization during 2003-2007, he was the Business Alliance Director in Nortel Networks (China) as well as the TD-SCDMA Prime in charge of Business partnership opportunities and negotiations, and 3G marketing.

On January 9, 2009, the BoD members of the Forum elected Dr. Wang Jing the Secretary-General of the TD Forum.

Abstract

TD-SCDMA is being commercially deployed in China by China Mobile. As the first and only 3G standard originated by China, it faces huge opportunities and challenges. Dr. Jing Wang, Secretary General of TD Forum based in Beijing, will depict a picture of current status and future development of this technology, and its evolution TD-LTE, within and beyond the China market. Also, Dr. Wang will offer his analysis over the competition dynamics of three Chinese telecom operators and their strategies on mobile phones, contents, and applications.

The Past, Present and Future of SAR Assessments and Human Safety of Electromagnetic Radiation

Prof. Dr. Niels Kuster

Director-IT'IS Foundation, Professor- Swiss Federal Institute of Technology Zurich, Switzerland

Date/Time: Tuesday 13 April 2010/ 11:40 – 12:20
Venue: Meeting Hall 2

Professor Niels Kuster received his MS and PhD degrees in Electrical Engineering from the Swiss Federal Institute of Technology (ETH) in Zurich. In 1993, he was elected Professor at the Department of Electrical Engineering of ETHZ. He has also served as the founding Director of the Foundation for Research on Information Technologies in Society (IT'IS), Switzerland since its inception in 1999. During his career he has held invited professorships at the Electromagnetics Laboratory of Motorola, Inc, Florida, and at the Metropolitan University in Tokyo, Japan in 1998. In addition, he is a founding member of Schmid & Partner Engineering AG (1993), MaxWave AG (1999), NFT (2001) and Zurich Med Tech (2006).

His primary research interests are in the safe and beneficial applications of electromagnetic fields in health and information technologies. He is particularly interested in 1) measurement technology; 2) computational electrodynamics for the evaluation of close near-fields in complex environments (e.g., handheld or body-mounted transceivers, residential/work environments, etc.); 3) safe and reliable wireless communication links within the body or between

implanted devices and exterior equipment for biometric applications; 4) development of exposure setups and quality control for bioexperiments to evaluate interaction mechanisms, therapeutic effects and potential health risks; 5) exposure assessments; 6) EM safety of medical devices; 7) medical diagnostic and therapeutic applications of EM, in particular EM cancer treatment modalities; and 8) virtual patient applications. He is currently building up a new research team in computational life science.

Niels has published more than 500 publications (books, journals and proceedings) on measurement techniques, computational electromagnetics, dosimetry, exposure assessments and bioexperiments. He is a member of several standardization bodies and consults government agencies around the globe on the safety of mobile communications. He also serves on the boards of various scientific societies and journals. He is the current Past President of The Bioelectromagnetics Society, Associate Editor of IEEE Transactions on Electromagnetic Compatibility and an Editorial Board member of Bioelectromagnetics.

Abstract

Radio-frequency (RF) electromagnetic field (EMF) exposure assessments can be divided into two categories: 1) incident field assessment, i.e., the quantification of the incident EMF or the field characteristics at the location of the exposed bodies without their presence (plane-wave equivalent), and 2) dosimetry, i.e., the quantification of the EMF induced in the biological tissues of a human. The dosimetric quantity above 10 MHz associated with biological effects as determined by the standardization bodies (e.g., ANSI/IEEE, ICNIRP, NCRP) are the whole-body averaged and peak spatial specific absorption rates (wbSAR, psSAR), expressed in units of W/kg. Below 100kHz, the safety limits are defined in terms of induced fields and current density. Between 100 kHz and 10 MHz both dosimetric concepts must be considered. Highly accurate, individually-based exposure predictions are required for medical applications, such as hyperthermia, as well as for biological in vivo and in vitro experiments. Reliable estimates of the exposure of specific user groups are required for epidemiological studies aimed at correlating human exposure to EMF with possible health effects.

In compliance evaluation, reliable demonstration that the actual exposure is below the safety limits for a certain population coverage is the key objective (e.g. IEEE 1528, IEC 62209, etc.). For most sources that do not operate in the close vicinity of the body, compliance can be reliably and conclusively demonstrated by simple incident field measurements. The strongest exposures of human tissue, however, result from hand-held and body-mounted devices.

The exponential growth of mobile communication technologies and their usage by more than 4 billion users worldwide has increased the RF exposure of the average person by several degrees of magnitude. The quality of the exposure is also changing due to the continually evolving technologies, and therefore new concerns are constantly being raised about the potential health risks associated with these applications.

Research has been divided into the following two areas to address these health concerns:
- general dosimetry and compliance testing with respect to SAR and induced fields
- biological research to support risk evaluations

Due to the substantial funding allocated to these two research areas by government and industry, impressive progress has been achieved during the last 15 years. Compliance testing became a worldwide standard for mobile devices with uncertainties of less than 20%, and in addition, installation rules have also been developed to reduce the average and maximum exposures. These procedures are based on a fundamental knowledge of the mechanisms of interaction, novel instrumentation (scanners, probes, phantoms, tissue simulating materials) and novel computational codes. Future trends indicate that both measurement and simulation need to be applied for demonstrating compliance. The literature on studies related to risk assessment has been significantly expanded, now including epidemiological, human volunteer, in vivo and in vitro studies.

This Plenary Speech will discuss the achievements during the last decade, the current state-of-the-art, and identify current shortcomings and open issues to be addressed in the future. Although some of the shortcomings are due to the inevitable consequence of struggling to keep pace with the quickly evolving new and complex wireless technologies that significantly change the human exposures, other challenges are due to the publication of scientifically unexplainable findings. Another focus will be on how to avoid the mistakes of the past.

The Future of EMC Requirements, Design and Tools

Dr. Bruce Archambeault

IEEE Fellow, IBM Distinguished Engineer, IBM, USA

Date/Time: Tuesday 14 April 2010/ 08:40 – 09:30

Venue: Meeting Hall 2

Dr. Bruce Archambeault is an IBM Distinguished Engineer at IBM in Research Triangle Park, NC. He received his B.S.E.E degree from the University of New Hampshire in 1977 and his M.S.E.E degree from Northeastern University in 1981. He received his Ph. D. from the University of New Hampshire in 1997. His doctoral research was in the area of computational electromagnetics applied to real-world EMC problems.

Dr. Archambeault has authored or co-authored a number of papers in computational electromagnetics, mostly applied to real-world EMC applications. He is currently the IEEE EMC Society Technical Activities Chair, a past member of the Board of Directors for the IEEE EMC Society and a past Board of Directors member for the Applied Computational Electromagnetics Society (ACES). He has served as a past IEEE/EMCS Distinguished Lecturer and was awarded the IEEE EMC Society's Richard R. Stoddart Award for Outstanding Technical Performance in 2009. He is the author of the book "PCB Design for Real-World EMI Control" and the lead author of the book titled "EMI/EMC Computational Modeling Handbook".

Abstract

The past 25 years has seen an enormous growth in the proliferation of electronic equipment, data rates and wireless technologies! EMC concerns have largely focused on RF emission levels from electronic data processing equipment and as data rates have increased to well over 1 GHz, controlling emissions levels has been challenging.

However, looking towards the future, the challenges in EMC appear to migrate from emissions issues to inter-system and intra-system immunity issues. These can be much more challenging when digital, analog, and RF signals must exist on the same printed circuit board (PCB) and in close proximity! It is reasonable to expect that data rates will continue to increase, although not as the same pace as the past years, and that the signal voltage levels will continue to decrease, making the immunity issue more complex and vital.

Currently there are a number of software tools that can help the EMC engineer perform simulations (both full wave and quasi-static) as well as PCB rule checking tools. However, simulation tools are limited in the amount of detailed design information that can be included in a realistic model and rule checking tools are limited to simple pass/fail responses. Also, most of these existing tools focus more on emissions than immunity. The future density of the mix of electronic circuits and the need to focus more on immunity will require new levels of tools/techniques be developed that combine the accuracy of the simulation tools with the speed of the rule checking tools.

This Plenary Speech will discuss the trends expected in industry for the increasing data rates, and the requirements for this new level of tools/techniques. Various industries have their own significant challenges. For example, the auto industry must merge high-power/low-frequency equipment with low voltage sensors and control equipment as well as an array of RF antennas and communication devices. The consumer electronics industry must merge RF, analog, and digital into very small packages (smart phones, etc). There are many other examples as well that will be discussed.

Industry Status and Technology Trends of Integrated Circuit design in China

Prof. Dr. Zhihua Wang

Tsinghua University, Beijing, China

Date/Time: Tuesday 14 April 2010/ 09:30 – 10:20

Venue: Meeting Hall 2

Prof. Zhihua Wang (M'99–SM'04) received the B.S., M.S., and Ph.D. degree in electronic engineering from Tsinghua University, Beijing, China, in 1983, 1985, and 1990, respectively. In 1983, he became a faculty member of Tsinghua University, where he has been a full Professor since 1997 and Deputy Director of Institute of Microelectronics since 2000. From 1992 to 1993, he was a visiting scholar at Carnegie Mellon University, USA. From 1993 to 1994, he was a visiting researcher at K.U. Leuven, Belgium. His current research mainly focuses on CMOS RFIC and biomedical applications. His ongoing projects include RFID, PLL, low power wireless transceivers, and smart clinic equipment with combination of leading edge CMOS RFIC and digital imaging processing techniques. He has published over 180 papers and 4 books, and he holds 25 patents, with over 10 pending.

Prof. Wang is one of the chief scientists of China Ministry of Science and Technology, and serves on the expert committee of the National High Technology Research and Development Program of China (863 Program) in the area of information science and technologies. He was the founding chair of IEEE Solid-State Circuit Society Beijing Chapter since 1999. He has been a TPC member of IEEE International Solid-State Circuit Conference (ISSCC) since 2005. He was the Guest Editor for the December issues of JSSC in 2006 and 2009, and is an Associate Editor for IEEE Transactions on Biomedical Circuits and Systems and IEEE Transactions on Circuits and Systems (II).

Abstract

The research and development activities in the field of integrated circuits of China are given in this presentation. First, research supporting programs related to information technique including IC design in China was introduced. Then the current situation of Integrated Circuit design industries of mainland China in 2008 and 2009 was discussed. For a special case, the research activities of IC design in the Institute of microelectronics Tsinghua University are addressed at the end of the presentation. Two ongoing projects in medical application and IC design to be used in smart grid are demonstrated.

Technical Sessions

Tuesday, 13 April 2010 Room 303

TU-AM-A1: SS-10-Biomedical EMC-A Chairs: **Dr. C.-K. Chou, Prof. Ji Chen**		No.
8:40am -9:00am	TU-AM-A1-1 **Modeling Interference Voltage at Cardiac Pacemaker for Ultra Wideband Signals** **Qiong Wang, Jianqing Wang;** *-Nagoya Institute of Technology, Nagoya, Japan*; **Qiong Wang**; *- Dresden University of Technology, Dresden, Germany*	290
9:00am -9:20am	TU-AM-A1-2 **EMC and Wireless Healthcare** **Donald Witters, Seth Seidman, Howard Bassen**; *-Center for Devices and Radiological Health, U.S. Food and Drug Administration, Silver Spring, MD, USA*	473
9:20am -9:40am	TU-AM-A1-3 **Review of RFR-Genotoxicity Studies** **Luc Verschaeve; -***Scientific Institute of Public Health, Brussels, Belgium*	161
9:40am -10:00am	TU-AM-A1-4 **Radiofrequency Studies on Tumorigenesis and the Blood-Brain Barrier in Lab Animals Support the Conclusion of No Adverse Effects without Significant Tissue Temperature Increase** **Joe A. Elder**; **-** *1130 NW 99th Avenue, Plantation, Florida, USA*	299
10:00am -10:20am	TU-AM-A1-5 **Radiofrequency Exposure: a Review of Non Cancer Related In Vivo and In Vitro Studies** **Carmela Marino; -***ENEA Casaccia Research Center, Rome, Italy*	195
TU-PM-A1: SS-10-Biomedical EMC-B Chairs: **Prof. Osamu Fujiwara, Prof. Jianqing Wang**		
1:20pm -1:40pm	TU-PM-A1-1 **A Review of Physical Mechanisms of Radiofrequency Interaction with Biological Systems** **Mays Swicord, Quirino Balzano, Asher Sheppard**; *-Mays Swicord Consulting, Fort Lauderdale, Florida, United States;* **Quirino Balzano**; *-University of Maryland, Maryland, USA;* **Asher R. Sheppard**; *-Asher Sheppard Consulting, California, USA*	29
1:40pm -2:00pm	TU-PM-A1-2 **Chinese Human Voxel Models for Evaluation of EMF Exposure Purpose: in Development** **Tongning WU, Chen ZHAO, Bingsong LU**; *-Telecommunication Metrology Center of Ministry of Industry and Information Technology, Beijing, China*; **Liwen Tan, Shaoxiang ZHANG**; *-College of Basic Medical Sciences Third Military Medical University, Chongqing, China*	323
2:00pm -2:20pm	TU-PM-A1-3 **Channel Modelling of WBAN System and Human Exposure due to WPT** **Tae-hong Kim; Joon-heork Oh; Won-jeong Jeong; Ji-ho Yoo; Jeong-ki Pack; -***Chungnam National University, Daejeon, South Korea*	100
2:20pm -2:40pm	TU-PM-A1-4 **Temperature Elevation in Japanese Head Models for Local SAR with Different Averaging Mass** **Akimasa Hirata, Osamu Fujiwara;** *-Nagoya Institute of Technology, Nagoya, Japan*	407
2:40pm -3:00pm	TU-PM-A1-5 **Why Hardware Developers Should Support Continued Development of RF/Microwave Exposure Standards** **John M. Ziriax and John A. D'Andrea**; *-Directed Energy Bioeffects Department, Naval Medical Research Unit, San Antonio, Texas, USA*	478
3:00pm -3:20pm	TU-PM-A1-6 **Near Fields Radiation Superposition Assessment in Human Nearby Users of Cellular Phones** **C. P. Costa, G. Fontgalland**; *-Federal University of Campina Grande, Campina Grande, Brazil*; **S. E. Barbin;-** *University of São Paulo, Butantã, São Paulo, SP, Brazil*	489

TU-PM-A2: SS-7-EMC in Mobile Phones Chairs: **Dr. Jingyu Huang, Dr. Soon Jae Kwon**		
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4:00pm -4:20pm	TU-PM-A2-2 **Influence on SAR due to Metallic Frame of Glasses based on High-Resolution Chinese Electromagnetic Human Model** **Min Zhang, Xiao Wang**; *-Tongji University, Shanghai, China*	183
4:20pm -4:40pm	TU-PM-A2-3 **The Signal Integrity Simulation in Mobile Phone Design** **Feng Wu**; *- NOKIA, Beijing, China*	338
4:40pm -5:00pm	TU-PM-A2-4 **Improving Electromagnetic Compatibility Performance of Packages and SiP Modules Using a Conformal Shielding Solution** **Nozad Karim, Jingkun Mao**; *-Amkor Technology, Chandler, AZ, USA*; **Jun Fan**; *-Missouri University of Science and Technology, Rolla, MO, USA*	94
5:00pm -5:20pm	TU-PM-A2-5 **High Frequency Performance, Measurement and Modelling of Simple Mechanical Ground Contacts Used in Mobile Phones** **Andy White**; *-Nokia Corporation, San Diego CA, USA*	500
5:20pm -5:40pm	TU-PM-A2-6 **Analysis and Suppression of Self-Jamming Issue in Mobile Equipments by Using APD Measurement** **Satoshi Kazama, Hiroshi Tsutagaya**; *-TAIYO YUDEN CO., LTD., Gunma, JAPAN*	114
5:40pm -6:00pm	TU-PM-A2-7 **Analysis of Mobile Phone's Immunity to Electrostatic Discharge Soft Failures** **Soon Jae Kwon, Ki Hyuk Kim, Yongsup Kim, Austin. S. Kim**; *- Samsung Electronics Co., Ltd., South Korea*	378

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TU-AM-B1: TC-1- EMC Management Chairs: **Dr. Elya B. Joffe, Prof. Toshio Sudo**		**No.**
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9:20am -9:40am	TU-AM-B1-2 **Study on The Frequency Spectrum Management Model of Satellite Radio Communication Systems** **Shun-xiang Lai**; *-Beijing Institute of telemetry and telecommunications Technology, Beijing, China*	494
9:40am -10:00am	TU-AM-B1-3 **Dynamic Spectrum Management with Minimizing User's Budget** **Tawiwat Veeraklaew**; *-Laboratory of Platform and Material, Defence Technology Institute, THAILAND*; **Settapong Malisuwan**, *- The Royal Thai Armed Forces, Thailand*; **Sanpachai Huvanundana**, *- Chulachomklao Royal Military Academy, Thailand;* **Atiwat Aimdilokwong,***-National Telecommunications Comission, THAILAND*	210
10:00am -10:20am	TU-AM-B1-4 **The Electromagnetic Interference (EMI) Affect on Power Supply of Telecom Equipment** **M. Kchikach, A. Elhasnanoui, K.ZAZI;** *-Ecole Nationale de l'Industrie Minérale (ENIM), Rabat, Morocco*; **Z. M. Qian**; *-Zhejiang University, Hangzhou, China*	13

TU-PM-B1: TC-9- Antenna and Propagation Issues-A Chairs: **Prof. Sungtek Kahng, Prof. Zhijun Zhang**		
1:20pm -1:40pm	TU-PM-B1-1 **The Slitted Decouple Design for Metallic Item Detection in UHF RFID Systems** **Zhonghao HU**; **Peter Cole**; *-The University of Adelaide, Adelaide, Australia*	25
1:40pm -2:00pm	TU-PM-B1-2 **Analysis of the Equal-Delay Transformer with Non-commensurate Constituent Transmission Lines** **James McLean**; **Heinrich Foltz**; **Robert Sutton**; *-TDK R&D Corp, Cedar Park, TX, United States*; **R. Sutton**; *-The University of Texas–Pan American, Edinburg, TX, USA*	33
2:00pm -2:20pm	TU-PM-B1-3 **Investigations of Microwave Pulse Propagation in Ionosphere** **Dan Yang**; **Hai-jun Fu**; **Cheng Liao**; *-Southwest Jiaotong University, Chengdu, China*	38
2:20pm -2:40pm	TU-PM-B1-4 **Optimised Wireless Network Using Smart Mobile Terminal Antenna (SMTA) System** **Junwei Lu**, **Ian Scriven**, **Wayne Water**; *-Griffith University, Qld, Australia*	143
2:40pm -3:00pm	TU-PM-B1-5 **Metamaterial Entrenched Circular Microstrip Antenna for Malaysia HAPS** **A.A.M Ezanuddin, M.F Malek, P.J Soh, R.B Ahmad; -***University Malaysia Perlis (UniMAP), Perlis, Malaysia*	181
3:00pm -3:20pm	TU-PM-B1-6 **Bidirectional Multiple Polarization Antenna System** **Hongtao Jia, Yue Li, Zhijun Zhang, Zhenghe Feng;-** *National Laboratory for Information Science and Technology, Tsinghua University, Beijing, China;* **Ruihong Li;-** *National Engineering Research Center of Mobile Communication, Guangzhou, China*	572
TU-PM-B2: TC-12-Communication EMC Chairs: **Prof. Franz Schlagenhaufer, Prof. Peter Leung**		
3:40pm -4:00pm	TU-PM-B2-1 **Front-End Linearity and Preselect Requirements for Interference Robust UWB Systems** **Oliver Lauer, David Barra, Marco Zahner, Rudiger Vahldieck, Heinz Jackel, Jurg Frohlich; -***Swiss Federal Institute of Technology Zurich, Switzerland*	172
4:00pm -4:20pm	TU-PM-B2-2 **Effective Power Saving Method on Self-Sustaining System using Piezoelectric Power Generator** **Jong hong Kim, Ji hoon Hwang, Do-Won Kim, Ju-Hwan Jung, Yeong-Rak Seong, Ha-Ryoung Oh, Jun-Seok Park;***-Kookmin University, Seoul, South Korea*	101
4:20pm -4:40pm	TU-PM-B2-3 **Noise Improvement of 3-5GHz COMS UWB LNA With Low Power Consumption** **Chia-Chien Li**, **Jeng-Rern Yang**; *-Yuan Ze University, Taoyuan County, Chinese Taipei*	136
4:40pm -5:00pm	TU-PM-B2-4 **On-Site EMC Assessment of IT Equipment in Financial Data Centre of Hong Kong** **K H Chan, S W Leung, Y M Siu, C K Tang;** *-City University of Hong Kong, Hong Kong, P. R. China*	289
5:00pm -5:20pm	TU-PM-B2-5 **Designing Mobile Transmitters in View of SAR, HAC and OTA Constraints** **Erdem Ofli, Fin Bomholt, Niels Kuster**; *-Schmid & Partner Engineering AG, Zurich, Switzerland*; **Mark Douglas**; *-IT'IS Foundation, ETH, Zurich, Switzerland*	450
5:20pm -5:40pm	TU-PM-B2-6 **Design and Reliability Tests of a Wireless System to Monitor and Control High Voltage Switch Cabinets** **Hao Kou, Yulong Huang, Zhaoxi Liu; -***Tsinghua University, Beijing, China;* **Liangzhong Yao; -***AREVA T&D Technology Centre, Stafford, United Kingdom*	367

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TU-AM-C1: SS-6-Effects and Protection of Intentional Electromagnetic Interference-A Chairs: **Dr. William Radasky, Prof. Wen-Yan Yin**		No.
8:40am -9:00am	TU-AM-C1-1 **Intentional EMI against Critical Infrastructures, a Discussion on Mitigation Philosophy** **Daniel Månsson;** *-High Voltage Valley, Ludvika, Sweden*; **Mats Bäckström; -***Combitech AB, Linköping, Sweden*; **Rajeev Thottappillil; -***Royal Institute of Technology, Stockholm, Sweden*	145
9:00am -9:20am	TU-AM-C1-2 **An Alternative EM Shielding Effectiveness Measurement Method for Buildings** **E. B. Savage, J. L. Gilbert, W. A. Radasky, and M. J. Madrid; -***Metatech Corporation, California, USA*	178
9:20am -9:40am	TU-AM-C1-3 **Transient Analysis of Transmission Lines Loaded by Active Devices Illuminated by an Electro-magnetic Pulse in the Indoor Environment** **Jian Wang, Jin-Peng Fang, Wen-Yan Yin**; *-Shanghai Jiao Tong University, Shanghai, P. R. China*; **Wen-Yan Yin**; *-Zhe Jiang University, Hangzhou, P.R. China*	259
9:40am -10:00am	TU-AM-C1-4 **Rep-Rate Influence on Electromagnetic Effects** **Libor Palisek; Lubos Suchy; -***division VTUPV Vyskov, Vyskov, Czech Republic*	42
10:00am -10:20am	TU-AM-C1-5 **Calculation of the EMP Response of Transmission Lines with Nonlinear Loads** **Lihua Shi, Zhou Ying-hui, Zhang Qi**; *-Nanjing Engineering Institute, Nanjing, China*	138
TU-PM-C1: SS-5-Numerical Modeling for Complex EMC Systems Chairs: **Prof. Ji Chen, Dr. Bruce Archambeault**		
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1:40pm -2:00pm	TU-PM-C1-2 **Parallel-Plate Noise Suppression Using a Ground Surface Perturbation Lattice (GSPL) Structure** **Antonio Scogna**; *-CST of America Inc, Framingham, MA, Chinese Taipei*; **Chuen-De Wang, Tzong-Lin Wu**; *-National Taiwan University, Taipei, Chinese Taipei*; **Antonio Orlandi**; *University of L'Aquila, L'Aquila, Italy*	68
2:00pm -2:20pm	TU-PM-C1-3 **A Novel Millimeter Wave Band-pass Frequency Selective Surface Transparent to Infrared Wave** **Zhiyuan Zong, Wen Wu, Lingfei Shi, Dagang Fang**; *-Nanjing University of Scienceand Technology, Nanjing, China*	219
2:20pm -2:40pm	TU-PM-C1-4 **Modeling Complex Systems for EMC and Signal Integrity** **Bruce Archambeault, Sam Connor**; *-IBM, North Carolina, USA*	474
2:40pm -3:00pm	TU-PM-C1-5 **Electromagnetic Compatibility Issues between Vehicular Mounted Antennas and Implantable Medical Devices** **Minshen Wang, Jianxiang Shen, Ji Chen**; *-University of Houston, Houston, USA*; **Wolfgang Kainz, Gonzalo Mendoza**; *-United States Food and Drug Administration, Maryland, USA*; **Giorgi Bit-Babik**; *-Motorola Inc, FL, USA*	481
3:00pm -3:20pm	TU-PM-C1-6 **FDTD Modeling of Absorbing Materials for EMI Applications** **Jianfeng Xu, Marina Y. Koledintseva, Soumya De, Andriy Radchenko, Richard E. DuBroff, James L. Drewniak**;- *Missouri University of Science and Technology, Rolla, USA*; **Yongxue He, Richard Johnson**; *-Laird Technologies, USA*	526

TU-PM-C2: TC-13-Computational Electromagnetics-A Chairs: **Prof. Xinqing Sheng, Prof. Mauro Feliziani**		
3:40pm -4:00pm	TU-PM-C2-1 **Zooming into the Near Field: A Novel Formulation of the BEM as Applied to EMC Modeling and Simulation Problems (Invited)** **Alireza Baghai-Wadji; -***RMIT University, Melbourne, Australia*	550
4:00pm -4:20pm	TU-PM-C2-2 **A Kind of Subgrid Technology for FDTD Analysis of Electromagnetic Problems** **Jiao Xie**, **Yang Yang**, **Shaobin Liu**, **Rushan Chen**; *-Nanjing University of Aeronautics and Astronautic, Nanjing, China*; **R.S. Chen**; *-Nanjing University of Science and Technology, Nanjing, China*	46
4:20pm -4:40pm	TU-PM-C2-3 **Parallel High-Order FE-BI-MLFMA for Scattering by Cavities Loaded with Complex Obstacles** **Minglin Yang**, **Xin-Qing Sheng; -***Beijing Institute of Technology, Beijing, China*	134
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5:00pm -5:20pm	TU-PM-C2-5 **A Novel Linearization Method for Full Wave EMI Simulation of Switching Power Supplier** **Min Zhang, Rui Wu;** *-TongJi University, Shanghai, China*	189
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5:40pm -6:00pm	TU-PM-C2-7 **An Efficient MOM/FEM Hybird Method for the Analysis of Enclosures with Apertures** **Sibel YENIKAYA**; *-Uludag University, Bursa, Turkey*	8

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TU-AM-D1: SS-1-EMC Test and Measurement-A Chairs: **Dr. Wenlie Liang, Prof. Han-Nien Lin**		**No.**
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9:20am -9:40am	TU-AM-D1-2 **Reduction of Electromagnetic Interference Caused by an Image Plane for a PCB** **His-Tseng Chou**; **Shih-Chung Tuan**; *-Yuan Ze University, Chinese Taipei;* **Shih-Chung Tuan**; *-Oriental Institute of Technology, Chinese Taipei*	86
9:40am -10:00am	TU-AM-D1-3 **Techniques of Evaluating High Impedance Surfaces used for SAR Reduction** **Ming-Shing Lin**; **Chuang-Hao Huang**; **Chung-I G. Hsu**; *-NYUST, Chinese Taipei*	121
10:00am -10:20am	TU-AM-D1-4 **An Improved Dual-probe Approach to Measure Noise Source Impedance** **Zhao Bo, Zhao Min, Yao Min; -***Nanjing University of Aeronautics & Astronautics, Nanjing, China;* **Feng Zhiming, Shui Limin;** *-Jiangsu Institute of Metrology, Nanjing, China*	397
TU-PM-D1: SS-16-EMC and Solution of Power Electronics Chairs: **Prof. Zhengming Zhao, Dr. Chongjian Li**		
1:20pm -1:40pm	TU-PM-D1-1 **Research on the Transient State of Large Power Voltage Source Inverter with IGCTs** **Chongjian Li, Chengsheng Wang, Chunyi Zhu, Zhiming Lan, Yuhui Dong; -***Automation Research and Design Institute of Metallurgical Industry, Bejing, China***; Chengsheng Wang; -***Beijing Aritime Intelligent Control CO., LTD, Beijing, China*	218
1:40pm -2:00pm	TU-PM-D1-2 **EMI Emission From Gate Drive Circuit of Boost Converter** **Guang Ling; Henglin Chen**; *-Zhejiang University, Hangzhou, China*	43

2:00pm -2:20pm	TU-PM-D1-3 **Simple PEEC Model of Complex DC Power Bus** **Fangzheng LI**; *-Academy of Armoured Force Engineering, Beijing, China;* **Xudong SUN**, **Lipei HUANG**; *-Tsinghua University, Beijing, China*	188
2:20pm -2:40pm	TU-PM-D1-4 **Conducted EMI Reduction in IGBT-based Converters** **Wang Xuesong, Zhao Zhengming, Yuan Liqiang**; *-Tsinghua University, Bejing, China*	222
2:40pm -3:00pm	TU-PM-D1-5 **A Novel Chaotic Carrier with Chaotic Oscillator Used in PWM Control for EMI Suppression** **Hong Li**, **Trillion Q. Zheng**; *-Beijing Jiaotong University, Bejing, China*; **Zhong Li, Wolfgang A.Halang; -***Fernuniversity at Hagen, Hagen, Germany*	230
3:00pm -3:20pm	TU-PM-D1-6 **Research on Harmonic Voltage via Nonlinear Frequency Synthesizing on Steel Plane with Common-Ground Coupling** **Tao Tao, Zhihua Zhao, Anqi Hu, Qijun Pan;** *-Naval University of Engineering, Wuhan, Hubei Province, China*	383
TU-PM-D2: SS-1-EMC Test and Measurement-B Chairs: **Dr. Mark Montrose, Prof. Han-Nien Lin**		
3:40pm -4:00pm	TU-PM-D2-1 **Near Field Probe for Detecting Frequency Resonances in EMC Application** **Jiang Xiao, Dazhao Liu, David Pommerenke, Wei Huang, Peng Shao, Xiang Li;** *-Missouri University of Science and Technology, Rolla, MO, United States;* **Jin Min, Giorgi Muchaidze;** *-Amber Precision Instruments, Santa Clara, CA, USA*	89
4:00pm -4:20pm	TU-PM-D2-2 **Research into the Use of Strip-Line Cell for EMI Test for Automobile Electronics** **Wen-Lie-Liang, Chen-Mao-Yuan, Zachary-Tseng** *-QuieTek Corporation, Hsinchu County, Chinese Taipei*	70
4:20pm -4:40pm	TU-PM-D2-3 **Measurements for EMI of Unintentional Radiator above 1GHz** **Kevin (Yu-Lung) Chen, Marlin Chen, Dream Cao**; *-QuieTek Corporation, Taipei City, Chinese Taipei*	139
4:40pm -5:00pm	TU-PM-D2-4 **Reduction of Radiated Electric Fields for ESD Immunity Design** **Hsing-Yi Chen, Jun-Kuan Li;** *-Yuan Ze University, Taoyuan Shian, Chinese Taipei*	204
5:00pm -5:20pm	TU-PM-D2-5 **Design of the UHVDC Corona Cage of China** **Jian Guo, Jiayu Lu, Wenliang Zhang;-** *China Electric Power Research Institute, Beijing, China*	573
5:20pm -5:40pm	TU-PM-D2-6 **Study on Simulating Test of Total Electric Field of Double-Circuit DC Transmission Line** **Yong Ju, Jiayu Lu, Wenliang Zhang, Hui Han, Jun Jiang, Chendong Xue, Peng Zhao, Xuedi Qu;-** *China Electric Power Research Institute, Beijing, China*	575
5:40pm -6:00pm	TU-PM-D2-7 **Miniature Electro-Optical Probe for Magnitude, Phase and Time-Domain Measurements of Radio-Frequency Magnetic Fields** **Sven Kuehn, Niels Kuster**; *-IT'IS Foundation ETH, Zurich, Switzerland*; **Fin Bomholt**; *-Schmid+Partner Engineering AG, Zurich, Switzerland*	236

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TU-AM-E1: TC-4- Electromagnetic Environment Chairs: **Mr. Eurlng Keith Armstrong, Prof. Zhenghe Feng**		**No.**
8:40am -9:00am	TU-AM-E1-1 **Interference Coupling on Armored Installation Cables, Measured in a Reverberation Chamber** **J. Nijenhuis,A.P.J. van Deursen**;*- Eindhoven University of Technology, Eindhoven, Netherlands*	355

9:00am -9:20am	TU-AM-E1-2 **Analysis of Ionized Field under HVDC Transmission Lines with Buildings Nearby** **Zhaonan Luo; Xiang Cui;-***North China Electric University, Beijing, China;* **Jiayu Lu;-***China Electric Power Research Institute, Beijing, China*	84
9:20am -9:40am	TU-AM-E1-3 **Sources of Disturbances on Wireless Communication in Industrial and Factory Environments** **Per Ängskog; Carl Karlsson; Javier Ferrer Coll; Jose Chilo; Peter Stenumgaard;-***University of Gävle, Gävle, Sweden;* **Javier Ferrer Coll;-** *KTH Royal Institute of Technology, Kista, Sweden;* **Peter Stenumgaard;-***Swedish Defence Research Agency, Sweden*	137
9:40am -10:00am	TU-AM-E1-4 **Characteristics of Insertion Loss of Transmission Line with Equal Line Length due to Rectangular Aperture Size in the Dual Backplanes** **Sung-Woo Jung, Ki-Chai Kim;***-Yeungnam University, Gyeongsan-si Gyeongsangbuk-do, South Korea*	366
10:00am -10:20am	TU-AM-E1-5 **Statistical Characterization of the Electromagnetic Environment in a Hospital** **Javier Ferrer Coll, Juan José Choquehuanca, José Chilo;-** *University of Gävle, Gävle, Sweden;* **Javier Ferrer Coll;-***KTH Royal Institute of Technology, Kista, Sweden;* **Peter Stenumgaard;-** *Swedish Defence Research Agency, Sweden*	155

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TU-AM-F1: TC-7-System-Level EMC and PCB EMC-A Chairs: **Prof. Francesca Maradei, Prof. Junwei Lu**		**No.**
8:40am -9:00am	TU-AM-F1-1 **A Genetic Algorithm based Method for Modeling Equivalent Emission Sources of Printed Circuits from Near-Field Measurements** **Xin Tong, David Thomas, Angela Nothofer, Phillip Sewell, Christos Christopoulos; -***University of Nottingham, Nottingham, United Kingdom*	34
9:00am -9:20am	TU-AM-F1-2 **Radiated Emission Far-Field Propagation with Multiple Ground Stitch Locations within a Printed Circuit Board** **Mark I. Montrose; -***Montrose Compliance Services, Inc., California, USA*	209
9:20am -9:40am	TU-AM-F1-3 **Transfer Network Models for EMI Coupling Paths Characterization of Multiconductor Cables** **Meng Jin, Zhang Xiangming, Hu Anqi, Zhang Lei, Ma Weiming;** *-Naval University of Engineering, Wuhan, China*	237
9:40am -10:00am	TU-AM-F1-4 **Bulk Current Injection Testing of Close Proximity Cable Current Return, 1 kHz to 1 MHz** **Arthur Bradley, William Lee, Vivek Singh, Brian Yavoich;** *-NASA Langley Research Center, Hampton, VA, United States*	24
10:00am -10:20am	TU-AM-F1-5 **Conducted Interference Reduction from Compact Fluorescents Lamps** **P. I. L. Ferreira, G. Fontgalland, G. F. Aragão, A. R. Z. Nascimento, R. C. S. Freire**; *-Federal University of Campina Grande, PB, Brazil*; **S. E. Barbin;-** *University of São Paulo, Butantã, São Paulo, SP, Brazil*	486
TU-PM-F1: SS-12-Signal and Power Integrity for Multi-Gbps Digital Circuits Chairs: **Prof. Jun Fan, Dr. Bill Chen**		
1:20pm -1:40pm	TU-PM-F1-1 **Analysis of Mutual Inductance Effect between Decoupling Capacitors on Planar Power Bus** **Jingook Kim, Jun Fan;** *-Missouri University of Science and Technology (formerly University of Missouri-Rolla), Rolla, MO, USA;* **Bruce Archambeault;** *-IBM Corporation, NC, USA;* **James L. Knighten;** *-Teradata Corporation, San Diego, CA, USA*	235

1:40pm -2:00pm	TU-PM-F1-2 **Measuring IC Switching Current Waveforms Using a GMI Probe for Power Integrity Studies** **Fan Zhou**, **Songping Wu**, **David Pommerenke, Jun Fan**; *-Missouri University of Science and Technology, Rolla, USA*; **Yoshiki Kayano**, **Hiroshi Inoue**; *-Akita University, Akita, Japan*; **Kenji Tan**; *-Akita Research and Development Center, Akita, Japan*	439
2:00pm -2:20pm	TU-PM-F1-3 **Modeling of Noise Coupling inside Multilayer Printed Circuit Boards Using Cavity Model and Segmentation Technique** **Zhenwei Yu, Jun Fan, James L. Drewniak; -***Missouri University of Science and Technology, Rolla, USA;* **Samuel Connor, Bruce Archambeault; -***IBM, NC, USA*	485
2:20pm -2:40pm	TU-PM-F1-4 **Investigation of Experimental Verification for Various Power Distribution Network Cases Through DLL Clock Jitter Affected by SSN** **Minchul Shin, Jongjoo Shim, Yujeong Shim, Joungho Kim;** *-KAIST, Daejeon, KOREA*	394
2:40pm -3:00pm	TU-PM-F1-5 **Signal Integrity Analysis of Embedded Planar EBG Structures** **Francesco De Paulis, Leo Raimondo, Antonio Orlandi;** *-University of L'Aquila, L'Aquila, Italy*	23
3:00pm -3:20pm	TU-PM-F1-6 **A Designated Clock Generation and Distribution (DCGD) Chip Scheme for Substrate Noise-Free 3D Stacked SiP Design** **Woojin Lee, Jeonghyeon Cho, Eakhwan Song, Joungho Kim;** *-Terahertz Interconnection and Package Lab., Dept. of EECS, KAIST, Daejeon, Republic of Korea;* **Chunghyun Ryu;** *-Samsung Electronics, Gyeonggi-do, Republic of Korea*	245
TU-PM-F2: TC-11-Power Integrity and Signal Integrity Chairs: **Dr. Bill Chen, Dr. Min Zhang**		
3:40pm -4:00pm	TU-PM-F2-1 **Factors Influencing the Successful Validation of Transient Phenomenon Modeling** **Ricardo Jauregui Telleria, Ferran Silva;** *-Universitat Politècnica de Catalunya, Catalunya, Spain;* **Antonio Orlandi; -***University of L'Aquila, Italy;* **Hugh Sasse, Alistair Duffy; -***De Montfort University, UK*	314
4:00pm -4:20pm	TU-PM-F2-2 **Discrete Spread-Spectrum Sampling (DSSS) to Reduce RF Emission and beat Frequency Issues** **Mart Coenen;** *-EMCMCC bv, Eindhoven, Netherlands;* Prof. **Arthur van Roermund;** *-TUE, Eindhoven, Netherlands*	327
4:20pm -4:40pm	TU-PM-F2-3 **An Innovative FPGA Internal Core Clock Jitter Prediction Methodology** **Lian Nee Soh, Hui Lee Teng, Man On Wong, Chee Seong Fong;** *-Altera Corporation, Penang, Malaysia;* **Peter Boyle;** *-Altera Corporation, San Jose, CA, USA*	113
4:40pm -5:00pm	TU-PM-F2-4 **Correlation of Measurement and Simulation for Simultaneous Switching Noise of FPGA** **Yo Takahashi, Yuki Yamamoto, Toshio Sudo;** *-Shibaura Institute of Technology, Tokyo, Japan;* **Yuki Yamamoto, Kunio Ota, and Kazuhisa Matsuge;** *-Toshiba Corporation Corporate Manufacturing Engineering Center, Yokohama, Japan;*	419
5:00pm -5:20pm	TU-PM-F2-5 **Novel on Chip Power Distribution Technique based on Plant Vein** **HuiFen Huang, QingXin Chu, SY Liu; -***South China University of Technology, Guangzhou, China;* **JianKang Xiao;** *-Hohai University, Changzhou, China;*	144
5:20pm -5:40pm	TU-PM-F2-6 **Effectively Compensating Parasitic Capacitance of ESD Component for High-speed Differential Channel in High Density Routing Platform** **Xingjian Kinger Cai, Ke Wang, Neffody E Kraskoff;** *Intel Corporation, Santa Clara, USA*	285
5:40pm -6:00pm	TU-PM-F2-7 **Modeling of power-ground planes with narrow slots by using efficient two-dimensional integral equation methods** **Xing Chang Wei, E. P. Li, G. P. Zou, and X. Cui; -** *A-STAR IHPC, Singapore*	578

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WE-AM-A2: TC-17-Biomedical Electromagnetics-A Chairs: Dr. C.-K. Chou, Prof. Jianqing Wang		No.
10:40am -11:00am	WE-AM-A2-1 **Breast Cancer Detector Using Microwave Tomography Image Technology (Invited)** **Jeong-Ki Pack, Tae-Hong Kim; -***Chungnam National University, Daejeon, South KOREA;* **Soon-Ik Jeon, Jong-Moon Lee;** *-ETRI, Daejeon, South KOREA;* **Ki-Chai Kim;** *-Yeungnam National University, South KOREA*	543
11:00am -11:20am	WE-AM-A2-2 **Full Human Body Exposure Assessment in Low Frequency Electromagnetic Fields** **X. L. Chen, N.Kuster;** *-IT'IS Foundation, Zurich, Switzerland;* **S. Benkler, N.Chavannes;** *-SPEAG Schmid & Partners Engineering, Zurich, Switzerland*	509
11:20am -11:40am	WE-AM-A2-3 **The Simulation of Specific Absorption on Human Head Model from Nuclear Electromagnetic Pulse** **ChongHua Fang, Qi Zhang, DaGang Xie,Yang Xu, ZhiYao Ding;** *-National Key Laboratory of Science and Technology on EMC, Wuhan, China*	37
11:40am -12:00am	WE-AM-A2-4 **Alteration of BBB Tight Junction Protein Expression Induced by EMP Exposure** **Gui-Rong Ding, Lian-Bo Qiu, Kang-Chu Li, Xiao-Wu Wang, Yong-Chun Zhou, Yan Zhou, Jun-ye Liu, Yu-Rong Li, Guo-zheng Guo; -***Fourth Military Medical University, Xi'an, China*	74
12:00am -12:20pm	WE-AM-A2-5 **A High Performance Static Magnetic Shielded Room 308or Detecting Biomagnetic Nanoparticles** **Qingmeng Wang, Tao Song, Ming Wang, Guanghao Zhang**; *-Chinese Academy of Sciences, Beijing, China;* **Qingmeng Wang, Guanghao Zhang**; *- Graduate University of the Chinese Academy of Sciences,Beijing,China*	389
WE-PM-A1: TC-17-Biomedical Electromagnetics-B Chairs: **Dr. C.-K. Chou, Prof. Jianqing Wang**		
1:20pm -1:40pm	WE-PM-A1-1 **Calibration Measurement Setup for Band-Selective Personal Exposure Meters** **Oliver Lauer, Hansruedi Benedickter, Jurg Frohlich; -***Swiss Federal Institute of Technology, Zurich, Switzerland;* **Georg Neubauer; -***Seibersdorf Labor GmbH, Seibersdorf, Austria;* **Martin Roosli; -***University Basel, Basel, Switzerland*	275
1:40pm -2:00pm	WE-PM-A1-2 **Hand Phantom Models for the Assessment of SAR in the Head from Cellular Telephones** **M. G. Douglas, N. Kuster;** *-IT'IS Foundation, Zurich, Switzerland;* **B. Derat;** *-Field Imaging, Meudon, France;* **E. Ofli;** *-Schmid & Partner Engineering, Zurich, Switzerland*	484
2:00pm -2:20pm	WE-PM-A1-3 **Recent Advances in Hyperthermia Cancer Treatment** **Esra Neufeld, Myles Capstick, Niels Kuster;** *-IT'IS Foundation, Zurich, Switzerland;* **Maarten Pauildes, Gerard van Rhoon; -***Daniel den Hoed Cancer Center, Rotterdam, Netherlands*	453
2:20pm -2:40pm	WE-PM-A1-4 **Effect of Position of the Pole Coils to Inductive Regional Heating** **Chumpon Patummakasorn, Chanchai Thongsopa;** *-Suranaree University of Technology, Nakhon ratchasima, Thailand*	461
2:40pm -3:00pm	WE-PM-A1-5 **Genotoxic Effects of Dielectric Barrier Discharge Air Plasma on Candida Shehatae** **Huixia Chen, Fengwu Bai, Zhilong Xiu; -***Dalian University of Technology, Dalian, China*	375
3:00pm -3:20pm	WE-PM-A1-6 **Oxidative Stress and Expressions of p53, Bax, Bcl-2 in Asthmatic Mice Exposed to Lead Aerosols in the Presence of Corona Discharge** **YoonShin Kim, DurgaBhavani Konga, SoMin Lee, CheolMin Le;** *-Hanyang University, Seoul, Republic of Korea;* **Seung-Cheol Hong; -***Inje University, Kimhae, Republic of Korea*	320

WE-PM-A2: TC-5-High Power EMC Chairs: **Dr. William Radasky, Prof. Xiang Cui**		
3:40pm -4:00pm	WE-PM-A2-1 **The Effect of Frequency on the Thermal Effect of High Power Microwave Pulses on a PIN Limiter** **Tao Xu, Xi Chen, Zhengwei Du;** *-Tsinghua University, Beijing, China*	53
4:00pm -4:20pm	WE-PM-A2-2 **Relationship between The Shape of Electric Field Probes and Their Measuring Performance** **Xiaoming Zhang, Cui Meng, Liu Yinong;** *-Tsinghua University, Beijing, China*	92
4:20pm -4:40pm	WE-PM-A2-3 **Research on the Electromagnetic Disturbance Source Considering the Effect of Valve Tower Stray Parameters** **Zhibin Zhao, Shaomeng Qi;** *-North China Electric Power University, Baoding city, Hebei Province, China;* **Qi Wang;** *-China Southern Power Grid, Guangzhoucity, Guangdong Province, China*	404
4:40pm -5:00pm	WE-PM-A2-4 **Shielding Effect of High Frequency Power Transformers for DC/DC Converters used in Solar PV Systems** **Sascha Stegen, Junwei Lu; -***Griffith University, Brisbane, Australia*	304
5:00pm -5:20pm	WE-PM-A2-5 **Experimental Research for γ-ray Interference Threshold of High Electromagnetic Pulse Sensor** **Cui MENG, Yinong LIU;** *-Tsinghua University, Beijing, China;* **Xiao_Qiang GUO, Xiang_Yue CHEN, Xin NIE;** *-Northwest Institute of Nuclear Technology, Xi'an, China*	149
5:20pm -5:40pm	WE-PM-A2-6 **Determination of EID Safety Distance in Pulsed Electromagnetic Environments (EME)** **F. Sonnemann; -***Diehl BGT Defence GmbH & Co.KG, Röthenbach, Germany;* **M. Hahn; -***Wehrtechnische Dienststelle für Informationstechnologie, Greding, Germany*	523

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WE-AM-B2: SS-11-ESD and Transients-A Chairs: **Prof. David Pommerenke, Prof. Ken Kawamata**		**No.**
10:40am -11:00am	WE-AM-B2-1 **Influence of the Surface Condition of Electrodes on Radiated EM Field Intensity due to Micro Gap Discharge** **Ken Kawamata;***-Hachinohe Institute of technology, Japan;* **Shigeki Minegishi; -***Tohoku Gakuin University, Japan;* **Osamu Fujiwara; -***Nagoya Institute of Technology, Japan*	215
11:00am -11:20am	WE-AM-B2-2 **Study on ESD Phenomena of Magnetic Head by 1ns Pulse ESD** **Takayoshi Ohtsu, Kouji Kataoka;** *-Hitachi Global Storage Technologies Japan, Ltd., Kozu, Japan;*	119
11:20am -11:40am	WE-AM-B2-3 **Effect of the Shapes of Metal Electrodes on ESD Current and Radiation Noise** **Takahiro Yoshida, Hiroshi Yoshihara, Kentaro Kawasaki, Noriaki Masui;** *-Tokyo University of Science, Tokyo, Japan*	168
11:40am -12:00am	WE-AM-B2-4 **Protection Design Against System-Level ESD Transient Disturbance on Display Panels** **Ming-Dou Ker, Wan-Yen Lin, Cheng-Cheng Yen; -***National Chiao-Tung University, Hsinchu, Taiwan, Chinese Taipei;* **Ming-Dou Ker; -***I-Shou University, Kaohsiung, Taiwan, Chinese Taipei;* **Che-Ming Yang, Tung-Yang Chen, Shih-Fan Chen; -***Himax Technologies, Inc., Tainan, Taiwan, Chinese Taipei*	187
12:00am -12:20am	WE-AM-B2-5 **Mathematical Analysis of ESD Generated EM Radiated Fields on Electronic Subsystem** **Rajashree Narendra, M.L.Sudheer; -***UVCE, Bangalore, India*; **V. Jithesh, D.C. Pande; -***LRDE, Bangalore, India*	291

WE-PM-B1: TC-15-Microwave Electronics and Components Chairs: **Prof. Dr. Niels Kuster, Prof. Qun Wu**		
1:20pm -1:40pm	WE-PM-B1-1 **Bandstop Filter Design Using Two-Section Structure and Z-domain Method** **Ching-Wen Huse, Yi-Hsien Tsai; -***National Taiwan University of Science and Technology, Taipei, Taiwan, Chinese Taipei;* **Chang-Yu Wu; -***Jin-Wen University of Science and Technology, Taipei, Taiwan, Chinese Taipei*	7
1:40pm -2:00pm	WE-PM-B1-2 **Optimization of Multislotted Rectangular Microstrip Patch Antenna using ANN and Bacterial Foraging Optimization** **K. Arun Kumar, D. Sriram Kumar, R. Malmathanraj**; *-National Institute of Technology Tiruchirapalli, Tiruchirapalli, India*; **R.Ashwath; -***N.I.T.Tiruchirapalli, Tiruchirapalli, India*	205
2:00pm -2:20pm	WE-PM-B1-3 **Broadband Compact Waveguide Loaded with Modified Split Ring Resonators Metamaterial** **Qi Tang, Fan-Yi Meng, Qun Wu;** *-Harbin Institute of Technology, Harbin, China;*	226
2:20pm -2:40pm	WE-PM-B1-4 **The 1550nm Fiber Laser Structure Chirped Pulse Amplification System base on PLL** **Yan Zhou;** *-University of California, CA, USA*; **Matt. S. Sebastiano;** *-Via Pisacane, Legnano, Italy*	159
2:40pm -3:00pm	WE-PM-B1-5 **RCS and Read Range of a UHF RFID Tag** **Thomaskutty Mathew;** *-Mahatma Gandhi University, Edappally, Kochi, India*; **M. A. Ziai, and John Batchelor;** *-University of Kent, Canterbury, United Kingdom*	432
3:00pm -3:20pm	WE-PM-B1-6 **Radiation and Temperature Effects on the Harmonic and Intermodulation Performance of Mach-Zehnder Optomodulator** **Muhammad Taher Abuelma'atti; -***King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia*	5
WE-PM-B2: SS-11-ESD and Transients-B Chairs: **Prof. Osamu Fujiwara, Prof. Ken Kawamata**		
3:40pm -4:00pm	WE-PM-B2-1 **Roles of ESD Played in Large Computing System Availability & Reliability** **Kwok M. Soohoo; -***IBM Corporation, Poughkeepsie (NY), USA*	496
4:00pm -4:20pm	WE-PM-B2-2 **Probe Characterization and Data Process for Current Reconstruction by Near Field Scanning** **Wei Huang, Dazhao Liu, Jiang Xiao, David Pommerenke;** *-Missouri University of Science and Technology, Rolla, MO, USA;* **Jin Min, Giorgi Muchaidze;** *-Amber Precision Instruments, Santa Clara, CA, USA*	322
4:20pm -4:40pm	WE-PM-B2-3 **A TLP-based Human Metal Model ESD-Generator for Device Qualification according to IEC 61000-4-2** **Yiqun Cao, David Johnsson, Matthias Stecher;** *-Infineon Technologies, Neubiberg, Germany*; **Bastian Arndt; -***Continental Automotive GmbH, Regensburg, Germany*	456
4:40pm -5:00pm	WE-PM-B2-4 **Impact of Setup and Pulse Generator on Automotive Component ESD Testing Results** **Friedrich zur Nieden, Stephan Frei;** *-Technische Universität Dortmund, Dortmund, Germany;* **Bastian Arndt, Johannes Edenhofer;** *-Continental Automotive GmbH, Regensburg, Germany*	480
5:00pm -5:20pm	WE-PM-B2-5 **Property of Sub-Process Transition in Short Gap Electrostatic Discharge with Electrode Moving Speed to Target** **Fangming Ruan, Xiaolu Wang;** *-Guizhou Normal University, Guiyang, China;* **Zhou Feng;** *- Ministry of Industry & Informatization of China, Bejing, China;* **Siyang Sun; -** *Beijing University of Post & Telecommunication, Beijing, China;* **Tomasz Dlugosz; -***Wroclaw University of Technology,Wroclaw50-370,Poland*	212

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WE-AM-C2: TC-13-Computational Electromagnetics-B Chairs: **Prof. Jin-Fa Lee, Prof. Junfa Mao**		No.
10:40am -11:00am	WE-AM-C2-1 **Hybrid Field-Circuit Simulation based on the Extended Time-Domain Finite Element Method (Invited)** **Rui Wang, Jian-Ming Jin; -***University of Illinois at Urbana-Champaign, Urbana, Illinois, USA*	527
11:00am -11:20am	WE-AM-C2-2 **Investigate on the Electromagnetic Scattering from A PEC Target above A Two-Layered Dielectric Rough Surfaces: Vertical Polarization** **A. Q. Wang, L. X. Guo, and C. Chai; -***Xidian University, Xi'an, P. R. China*	306
11:20am -11:40am	WE-AM-C2-3 **Particle Swarm Optimization Method for Complex Permittivity Extraction of Dispersive Materials** **Marcello Artioli, Mauriçio D. Perez, Ugo Reggiani, Leonardo Sandrolini; -***University of Bologna, Bologna, Italy*	471
11:40am -12:00am	WE-AM-C2-4 **Generalized Transition Matrix for Analysis of Electromagnetic Scattering from Inhomogeneous Bianisotropic Bodies** **Luo Zhang, Bo Zhang, Gaobiao Xiao; -***Shanghai Jiao Tong University, Shanghai, P. R. China*	319
12:00am -12:20pm	WE-AM-C2-5 **Harmonic Analysis of the DC Biased Epstein Frame-Like Core Model by the Harmonic Balance Finite Element Method** **Xiaojun Zhao, Lin Li**; *-North China Electric Power University, Baoding, China*; **Junwei Lu**; *-Griffith University, Brisbane, Australia*; **Zhiguang Cheng**; *-R&D Centre of Baoding Tianwei Group, Baoding, China*	66
WE-PM-C1: SS-4-Recent Progress in Modeling and Simulation for EMC-A Chairs: **Prof. Francesca Maradei, Prof. Xiang Cui**		
1:20pm -1:40pm	WE-PM-C1-1 **Modelling Approaches for Nanotechnology Applied to Electromagnetic Compatibility** **M.S. Sarto, A. Tamburrano; -***Sapienza University of Rome, Rome, Italy*	511
1:40pm -2:00pm	WE-PM-C1-2 **Analyses of High Speed Interconnects Using a Non-conformal Domain Decomposition Method** **Zhen Peng, Yang Shao, Jin-Fa Lee; -***The Ohio State University, Columbus, OHIO, USA*	362
2:00pm -2:20pm	WE-PM-C1-3 **Full-Wave Electromagnetic Modeling from DC to GHz using FEM-SPICE** **Haixin Ke; -***Washington University in St. Louis, St. Louis, USA*; **Todd Hubing; -***Clemson University, Clemson, SC, USA*; **Francescaromana Maradei; -***Sapienza University, Rome, Italy*	348
2:20pm -2:40pm	WE-PM-C1-4 **Simulation Methods for Signal Integrity of Automotive Bus Systems** **Harald Günther, Stephan Frei; -***Technische University at Dortmund, Dortmund, Germany*; **Thomas Wenzel; -***TUV Nord IFM, Elektronik und IT, Essen, Germany*	228
2:40pm -3:00pm	WE-PM-C1-5 **Quantifying the Quality of Agreement between Simulation and Validation Data for Multiple Data Sets** **Bruce Archambeault, Joseph (Jay) Diepenbrock; -***IBM, Research Triangle Park, NC, USA*	360
3:00pm -3:20pm	WE-PM-C1-6 **EMC Modeling of Large Electronic Systems** **Thomas Weiland; -***Technische Universität Darmstadt, Darmstadt, Germany*; **Min Zhang; -***Tongji University, Shanghai, China*	472
WE-PM-C2: SS-4-Recent Progress in Modeling and Simulation for EMC-B Chairs: **Prof. Francesca Maradei, Prof. Jin-Fa Lee**		

3:40pm -4:00pm	WE-PM-C2-1 **Fast Prediction of the Electromagnetic Shielding of Small Apertures Coated by Conductive Thin Films** **Marcello D'Amore; -***Sapienza University of Rome, Rome, Italy*; **Valerio De Santis, Mauro Feliziani; -** *University of L'Aquila, L'Aquila, Italy*	466
4:00pm -4:20pm	WE-PM-C2-2 **Shielding Effectiveness Evaluation and Optimization of Resonance Damping in Metallic Enclosures** **R. Araneo, G. Lovat, S. Celozzi; -***University of Rome, Rome, Italy*	425
4:20pm -4:40pm	WE-PM-C2-3 **Full-Wave Simulation Study of Radiation from Double Enclosure with Orthogonal Slots** **Min Zhang, Tianyi Lan; -***Tongji University, Shanghai, China*	332
4:40pm -5:00pm	WE-PM-C2-4 **Reverberation Chamber Field Modeling for Application to the Source Stirring Technique** **G. Cerri, V. Mariani Primiani, P. Russo; -***Università Politecnica delle Marche, Ancona, Italy*	298
5:00pm -5:20pm	WE-PM-C2-5 **Calculation of Overvoltage Distribution in HVDC Thyristor Valves** **Haifeng Sun; Xiang Cui; Lei Qi; Qi Wang; -***North China Electric Power University, Beijing, China*; **Qi Wang; -***China Southern Power Grid Co., Ltd., Guangzhou, China*	111
5:20pm -5:40pm	WE-PM-C2-6 **Computational Electromagnetic Modeling &Simulation of Ultra Wideband Sub-Surface Sensors for the Detection and Imaging of Buried Objects Using Spatial and Spectral Diversity** **John Norgard; -***NASA/JSC, Houston, TX, USA*; **Randall Musellman; -***USAFA*; **Andy Drozd; -***Andro Computational Solutions, USA*	104

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WE-AM-D2: SS-18-Advances on Radiated Measurements-A Chairs: **Dr. Zhong Chen, Ms. Janet O'Neil**		
10:40am -11:00am	WE-AM-D2-1 **An Alternative Approach to Radiated Susceptibility Testing of Airborne Equipment (Invited)** **Sergio A. Pignari, Flavia Grassi; -***Politecnico di Milano, Milan, Italy*	395
11:00am -11:20am	WE-AM-D2-2 **Traceable Measurements of Field Strength and SAR for the Physical Agents Directive - an Update** **T. Schrader, M. Salhi, T. Kleine-Ostmann; -***Physikalisch-Technische Bundesanstalt, Braunschweig, Germany*; **B. Loader, D. Adamson; -***National Physical Laboratory, Middlesex, UK*; **D. Allal; -***Laboratoire National de Métrologie et d'Essais, Paris Cedex, France*	292
11:20am -11:40am	WE-AM-D2-3 **Influence of Antenna Pattern on Site Validation above 1 GHz for Site VSWR Measurements** **Jochen Riedelsheimer, Friedrich-Wilhelm Trautnitz; -***Albatross Projects GmbH, Nattheim, Germany*	293
11:40am -12:00am	WE-AM-D2-4 **Understanding Geometry Specific Correction Factors in ANSI C63.5** **Zhong Chen; -***ETS-Lindgren, USA*	349
12:00am -12:20pm	WE-AM-D2-5 **Site Qualification Above 1 GHz and Svswr Systemic Errors** **Michael Windler; -***Underwriters Labs, United States*	273
WE-PM-D1: TC-2-EMC Measurement Techniques-A Chairs: **Dr. Perry Wilson, Dr. Xingchang Wei**		
1:20pm -1:40pm	WE-PM-D1-1 **A preliminary Ray Tracing Approach to Computational Electromagnetics for Reverberation Chambers** **F. Nauwelaerts; -***Laboratoria De Nayer v.z.w., St-Katelijne Waver, Belgium*; **D. Van Troyen,** *associatie K.U.Leuven, St-Katelijne Waver, Belgium*; **Guy.A.E. Vandenbosch,** *K.U.Leuven, Leuven, Belgium*	3

1:40pm -2:00pm	WE-PM-D1-2 **Polarization Selectivity for Pulsed Fields in a Reverberation Chamber** **Andrea Cozza; Houmam Moussa; -***SUPELEC, Gif-sur-Yvette, France*	26
2:00pm -2:20pm	WE-PM-D1-3 **An Experimental Method for Assessing the Modal Density in a Reverberation Chamber** **Andrea Cozza; -***SUPELEC, Gif-sur-Yvette, France*	99
2:20pm -2:40pm	WE-PM-D1-4 **Experimental Investigation of the Antenna Layout in Source Stirring Revberation Chamber** **Shuanggang LIANG, Jiadong XU; -***Northwestern Polytechnical University, Shaanxi xi'an, China*; **Jianjin DING, Yanning HUO; -***Shaanxi Hitech Electronic Co. Ltd, Shaanxi xi'an, China*	336
2:40pm -3:00pm	WE-PM-D1-5 **In-situ EMC Testing using Surface Current Sense Wires** **Mart Coenen**; *-EMCMCC bv, Eindhoven, Netherlands*; **Tim Maas**; *-ASML bv, Veldhoven, Netherlands*; **Yili Hu**; *-Student Eindhoven University of Technology, Netherlands;* **Arthur van Roermund**, **Yili Hu**; *-TUE, Eindhoven, Netherlands*	277
3:00pm -3:20pm	WE-PM-D1-6 **In Vitro Protocol to Study the Electromagnetic Interaction of RFIDs and Infusion Pumps** **Nickolas LaSorte; Ifeatu Akunne; Hazem Refail; -***University of Oklahoma, Tulsa, Oklahoma, USA*	126
WE-PM-D2: TC-8-Transportation and Automotive EMC Chairs: **Prof. Sergio Pignari, Prof. Junhong Wang**		
3:40pm -4:00pm	WE-PM-D2-1 **Advanced Simulations of Automotive EMC Measurement Setups using Stochastic Cable Bundle Models (Invited)** **Markus Gonser, Christoph Keller, Jan Hansen; -***Corporate Sector Research and Advance Engineering, Robert Bosch GmbH, Gerlingen, Germany;* **Robert Weigel;-** *University of Erlangen-Nürnberg, Erlangen, Germany*	545
4:00pm -4:20pm	WE-PM-D2-2 **The Coupling Characteristics Analysis between Antennas for Ship Formation** **Dongan Song;** *-Huazhong University of Science and Technology, Wuhan, China;* **Qi Zhang, Chonghua Fang, Jing Yu; -***China Ship Development and Design Centre, Wuhan, China*	50
4:20pm -4:40pm	WE-PM-D2-3 **EMC Assessment of the Railway Traction System by Using PSpice** **Kelin Jia, Rajeev Thottappillil; -***Royal Institute of Technology, Stockholm, Sweden*	110
4:40pm -5:00pm	WE-PM-D2-4 **Simulation of Wireless Sensor Networks on Vessels under Consideration of EMC** **Tobias Pilsak, Jan Luiken ter Haseborg; -***Hamburg University of Technology, Hamburg, Germany*	331
5:00pm -5:20pm	WE-PM-D2-5 **Predicting the Installed Performance of a RF Receiver's Antenna in its Operational Environment** **Raëd EL-MAKHOUR, François DE-DARAN, Frédéric LAFON; -***VALEO Interior Controls, EMC Laboratory, Créteil, France*; **M'hamed DRISSI, Erwan FOURN; -***IETR, Institut d'électronique et de Télécommunications de Rennes, Rennes Cedex, France*	468
5:20pm -5:40pm	WE-PM-D2-6 **Study of Susceptibility of an MCU Control System in the Automotive Field** **Fayu Wan, Fabrice Duval, Xavier Savatier, Anne Louis, Mazari Belahcene; -***Avenue Galilée, Saint Etienne du Rouvray, France*	97

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WE-AM-F2: SS-9-Modeling and Analysis of Packaging Structures for EM Reliability Chairs: **Dr. Ivan Ndip, Dr. Er-Ping Li**	**No.**

10:40am -11:00am	WE-AM-F2-1 **Fast and Concurrent Simulations for SI, PI, and EMI Analysis of Multilayer Printed Circuit Boards (invited)** **Xiaomin Duan, Renato Rimolo-Donadio, Heinz-Dietrich Brüns, Christian Schuster; -***Technische Universität Hamburg-Harburg Harburger Schloßstr, Hamburg, Germany*	529
11:00am -11:20am	WE-AM-F2-2 **Fast EMI Analysis of Massively Coupled Interconnects with Long Delay** **Ashok Narayanan; Ram Achar; Natalie Nakhla; Michel Nakhla; -***Carleton University, Ottawa, Ontario, Canada*	31
11:20am -11:40am	WE-AM-F2-3 **A Novel Time Domain Method to Extract Equivalent Circuit Model of Patterned Ground Structures;** **Chi-Hsuan Cheng, Chung-Hao Tsai, Tzong-Lin Wu; -***National Taiwan University, Chinese Taipei*	540
11:40am -12:00am	WE-AM-F2-4 **Electrical Modeling of Temperature Distributions in On-chip Interconnects, Packaging, and 3D Integration** **Lijun Jiang; -***IBM T.J. Watson Research Center, USA; the University of Hong Kong, Hong Kong;* **Chuan Xu; -***University of California at Santa Barbara,USA;* **Howard Smith; Barry Rubin; Alina Deutsch; Alain Caron; -***IBM T.J. Watson Research Center, USA*	552
12:00am -12:20pm	WE-AM-F2-5 **Equivalent Circuit Modeling of Signal Vias Considering their Return Current Paths** **Ivan Ndip, Florian Ohnimus, Kai Lobbicke, Christian Tschoban, Micha Bierwirth, Stephan Guttowski, Herbert Reichl; -***Fraunhofer IZM, Germany*	549
WE-PM-F1: TC-7- System-Level EMC and PCB EMC-B Chairs: **Dr. Kwok M. Soohoo, Prof. ShuGuo Xie**		
1:20pm -1:40pm	TU-PM-F1-1 **Filter Design for Suppression of Noise Coupling from PCB to DC Power Supply** **Wei-Shan Soh, Kye-Yak See, Manish Oswal, Lin-Biao Wang; -***Nanyang Technological University, Singapore, Singapore*; **Weng-Yew Chang; -***DSO National Laboratories, Singapore, Singapore*; **Vuttipon Tarateeraseth; -***Politecnico di Torino, Torino, Italy*	309
1:40pm -2:00pm	WE-PM-F1-2 **Common-Mode Interference Suppressor for Chopper Circuit based on Negative Capacitance: Applications and Improvements** **Anqi Hu, Weiming Ma, Jin Meng, Zhihua Zhao; -***Naval University of Engineering Wuhan, Hubei Province, China*	445
2:00pm -2:20pm	WE-PM-F1-3 **Considerations of EMI and EMC in the Design of 3D Imaging Microwave Altimeter** **Ailan Lan; Xiangkun Zhang; Jiang Jingshan; -***Center for Space Science and Applied Research, Chinese Academy of Sciences, Beijing, China;* **Yin Honggang; -***National Satellite Meteorological Center, Beijing, China*	73
2:20pm -2:40pm	WE-PM-F1-4 **A Novel Electromagnetic Radiated Emission Source Identification Methodology** **Song Zhenfei, Su Donglin, Dai Fei; -***Beihang University, Bejing, China;* **Fabrice DUVAL, Anne LOUIS; -***IRSEEM / ESIGELEC, France*	211
2:40pm -3:00pm	WE-PM-F1-5 **An Approach for Practical Use of Common-Mode Noise Reduction Technique for In-Vehicle Electronic Equipment** **Takanori Uno; -***Corporate R & D Department, DENSO CORPRATION, Aichi, Japan*; **Yuji Okazaki, Hideki Asai; -***Shizuoka University, Shizuoka, Japan*	267
3:00pm -3:20pm	WE-PM-F1-6 **A New Judging Method for Radar Electromagnetic Compatibility Analysis** **Guiyuan Li; Hou Zhang; Haiyang Xu; -***Missle Institute of AirForce Engineering University, Sanyuan, Shaanxi Province, China*	78

WE-PM-F2: TC-10-Electronic Packaging and Integration EMC Chairs: **Prof. Tzong-Lin Wu, Prof. Alireza BAGHAI-WADJI**		
3:40pm -4:00pm	WE-PM-F2-1 **Investigation of the Shielding on the Mobile Phone PCB Using FDTD** **Chung-Huan Li, Niels Kuster**; *-ETH Zurich, Zurich, Switzerland*; **Peter Futter, Nicolas Chavannes,** *Schmid & Partner Engineering AG (SPEAG), Zurich, Switzerland*	517
4:00pm -4:20pm	WE-PM-F2-2 **EMI and EMC Analysis of Arbitrarily Shaped Power-Ground Planes** **Guo-Ping Zou, Guang-Xiao Luo, Xiang-Cui; -***North China Electric Power University, Beijing, China*; **Er-Ping Li, Xing-Chang Wei; -***Computational Electronics and Photonics. A*STAR Institute of High Performance Computing, Singapore, Singapore*	341
4:20pm -4:40pm	WE-PM-F2-3 **Stopband Characteristics of Planar-Type Electromagnetic Bandgap Structure with Ferrite Film** **Yoshitaka Toyota, Kengo Iokibe, Ryuji Koga; -***Okayama University, Okayama, Japan*; **Koichi Kondo, Shigeyoshi Yoshida; -***Research & Development Unit, NEC TOKIN Corporation, Miyagi, Japan*	440
4:40pm -5:00pm	WE-PM-F2-4 **Electromagnetic Compatibility Analysis and Design for Digital Signal Controllers** **Changlin Zhou, Mingxin Hu, Xin Lin, Liming Dang, Tianchi Yang;** *-Information Engineering University, Zhengzhou, China;* **Mingxin Hu; -***Beijing University of the Post and Telecommunication, Beijing, China*	271
5:00pm -5:20pm	WE-PM-F2-5 **Comparison of Analysis, Simulation, and Measurement of Wire-to-Wire Crosstalk, Part 1** **Arthur T. Bradley; Brian J. Yavoich; Shane M. Hodson; Richard F. Godley**; *-NASA Langley Research Center, Hampton, VA, United States*	16
5:20pm -5:40pm	WE-PM-F2-6 **Comparison of Analysis, Simulation, and Measurement of Wire-to-Wire Crosstalk, Part 2** **Arthur T. Bradley; Brian J. Yavoich; Shane M. Hodson; Richard F. Godley**; *-NASA Langley Research Center, Hampton, VA, United States*	17

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TH-AM-A1: SS-8-Automotive EMC - EMC Solutions for New Automotive Technologies Chairs: **Prof. Stephan Frei**		
8:40am -9:20am	TH-AM-A1-1 **Module-Level Characterization for Vehicle-Level Emissions Modeling (Invited)** **Todd H. Hubing**; *-Clemson University International Center for Automotive Research, Greenville, SC, USA*	357
9:20am -9:40am	TH-AM-A1-2 **Virtual ESD Testing of Automotive Electronic Systems** **Bastian Arndt, Felix Mueller, Johannes Edenhofer**; *-Continental Automotive GmbH, Regensburg, Germany*; **Friedrich zur Nieden, Stephan Frei**; *-Technische Universität, Dortmund, Germany*	427
9:40am -10:00am	TH-AM-A1-3 **Conductive Electromagnetic Interferences of a Fuel Cell Bus** **Bo Zhang, Zhanqing Yu, Wei Li, Jinliang He, Shaofeng Yu**; *-Tsinghua University, Beijing, China;* **Yong Huang**; *-Tsinghua University, Beijing, China*	459
10:00am -10:20am	TH-AM-A1-4 **Simulation of Emissions of Power Electronic Devices in Electrical and Hybrid Electrical Vehicles** **Frank Kremer, Stephan Frei**; *-Technische Universität Dortmund, Dortmund, Germany*	479
TH-AM-A2: SS-17-Electromagnetic Environment of Power System Chairs: **Dr. H. W. Siew, Prof. A.P.J. van Deursen**		
10:40am -11:00am	TH-AM-A2-1 **Impacts of Geomagnetic Storms on EHV and UHV Power Grids** **W. A. Radasky, J. G. Kappenman**; *-Metatech Corporation, California, USA*	302

11:00am -11:20am	TH-AM-A2-2 **Geomagnetically Induced Currents in Electric Power Transmission Networks at Different Latitudes** **Chun-ming Liu, Lian-guang Liu**; *-North China Electric Power University, Beijing, China*; **Risto Pirjol**a; *-Finnish Meteorological Institute, Helsinki, Finland*	93
11:20am -11:40am	TH-AM-A2-3 **Investigation on Harmonic of Power Conditioning System for Laser Nuclear Fusion** **Qinyue Tan, Fuchang Lin, Shaorong Wang, Ling Dai, Hua L**i; *-Huazhong University of Science and Technology, Wuhan, P. R. China*	262
11:40am -12:00am	TH-AM-A2-4 **Analysis of the Power Frequency Electric Field Generated by High Voltage Substations** **Calin Munteanu, Vasile Topa, Adina Racasan, Marius Purcar**; *-Technical University of Cluj-Napoca, Cluj-Napoca, Romania*; **Ioan T. Pop, Gheorghe Visan**; *-Romanian Power Grid Company, Bucharest, Romania*	316
12:00am -12:20pm	**Tests on Electromagnetic Environment of Ultra HVDC Transmission Lines in High Altitude Region** **Zhanqing Yu, Rong Zeng, Min Li, Bo Zhang, Zheng Zhang**; *-Tsinghua University, Beijing, China;* **Ruihai Li, Lei Liu, Huaying Zhang**; *-Technology Research Center, China Southern Power Grid Co. Ltd, Guangzhoucity, Guangdong Province, China*	475
TH-PM-A1: SS-13-EMC Research and Development in Taiwan-A Chairs: **Prof. Ching-Wen Hsue, Dr. Chang-yu Wu**		
1:20pm -1:40pm	TH-PM-A1-1 **A Bird's-Eye View on Taiwan's EMC** **Jay-San Chen, Han-Chang Hsieh, Yung-Chi Tang**; *-BSMI, Ministry of Economic Affairs, Taiwan, Chinese Taipei*	225
1:40pm -2:00pm	TH-PM-A1-2 **Analysis of Platform Noise Effect on WWAN Performance** **Han-Nien Lin, Ching-Hsien Lin, Ming-Cheng Chang, Yu-Yang Shih**; *-Feng-Chia University, Taichung, Taiwan, Chinese Taipei*	216
2:00pm -2:20pm	TH-PM-A1-3 **A Dual-band Wilkinson Power Divider with Microstrip Slow-Wave Structures** **I-Tung Chou, Chia-Mei Peng, I-Fong Chen**; *-Jinwen University of Science and Technology, Taipei, Taiwan, Chinese Taipei*	217
2:20pm -2:40pm	TH-PM-A1-4 **Radiated EMI Prediction and Mechanism Modeling from Measured Noise of Microcontroller** **Han-Nien Lin, Tai-jung Cheng, Chih-Min Liao**; *-Feng-Chia University, Taichung, Taiwan, Chinese Taipei*	223
2:40pm -3:00pm	TH-PM-A1-5 **A Novel Coupled-line Low Pass Filter Design** **Jan-Dong Tseng**; *-Chin-Yi University of Technology, Taiwan, Chinese Taipei;* ***Cheng-Yuan Chin;*** *Chiao-Tung University, Taiwan, Chinese Taipei*	133
3:00pm -3:20pm	TH-PM-A1-6 **A Study of PCB EMI Measurement and Simulation** **Cheng-Chang Chen, Jian-Li Dong, Yen-Tang Chang, Chu-Kuo Chen, Shinichi Ikami**; *-BSMI, Taiwan, Chinese Taipei;* **Ching-Wen Hsue;** *-National Taiwan University of Science and Technology, Taiwan, Chinese Taipei*	227
TH-PM-A2: SS-13-EMC Research and Development in Taiwan-B Chairs: **Prof. Ching-Wen Hsue, Prof. Ruey-Bing Hwang**		
3:40pm -4:00pm	TH-PM-A2-1 **Time-Domain Analysis on the Scattering from a Reflector Antenna based on High Frequency Approximations** **Hsi-Tseng Chou, Hsi-Hsir Chou**; *-Yuan Ze University, Taiwan, Chinese Taipei*; **Shih-ChungTuan**; *-Oriental Institute of Technology, Taiwan, Chinese Taipei*	85

4:00pm -4:20pm	TH-PM-A2-2 **Radiated Emission from RF Microstrip Amplifier** **Han-Cheng Hsieh, Chi-Hsueh Wang, Chun Hsiung Chen**; *-National Taiwan University, Taiwan, Chinese Taipei*; **Jay-San Chen**; *-Ministry of Economic Affairs, Taiwan, Chinese Taipei*; **Cheng-Nan Chiu**; *-Da-Yeh University, Taiwan, Chinese Taipei*; **Ming-Shing Lin**; *-National Yunlin University of Science and Technology, Taiwan, Chinese Taipei*	115
4:20pm -4:40pm	TH-PM-A2-3 **Mobile Phones and Base Stations Versus Health Concern** **Chang-Yu Wu**; *-Jin-Wen University of Science and Technology, Taiwan, Chinese Taipei*; **Ta-Sung Lee**; *-National Communications Commision, Taiwan, Chinese Taipei*; **Ching-Wen Hsue**; *-National Taiwan University of Science and Technology, Taiwan, Chinese Taipei*	118
4:40pm -5:00pm	TH-PM-A2-4 **Mobile Communications and Measurement Techniques of EM Radiation from Base Stations in Taiwan** **Wen-Tron Shay, Wei-Ping Sun**; *-Industrial Technology Research Institute, Taiwan, Chinese Taipei*; **Chia-Mei Peng, Chang-Yu Wu**; *-Jin-Wen University of Science and Technology, Taiwan, Chinese Taipei*	120
5:00pm -5:20pm	TH-PM-A2-5 **Electromagnetic Interference in Substrate-Integrated Waveguides Circuit and Its Suppression Technique** **Ruey-Bing Hwang, Cheng-Yuan Chin, Yu-De Lin**; *-National Chiao-Tung University, Taiwan, Chinese Taipei*; **Toshihide Kitazawa**; *-Ritsumeikan University, Kyoto, Japan*; **Chang-Yu Wu**; *-Jinwen University of Science and Technology, Taiwan, Chinese Taipei*	130

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TH-AM-B1: SS-6-Effects and Protection of Intentional Electromagnetic Interference-B Chairs: **Dr. William Radasky, Prof. Wen-Yan Yin**		**No.**
8:40am -9:00am	TH-AM-B1-1 **Protection of Commercial Installations from the High-Frequency Electromagnetic Threats of HEMP and IEMI Using IEC Standards** **W. A. Radasky**; *-Metatech Corporation, California, USA*	303
9:00am -9:20am	TH-AM-B1-2 **Progress in IEC SC 77C High-Power Electromagnetics Publications in 2009** **Richard Hoad**; *-QinetiQ Ltd, Farnborough, UK*; **William A. Radasky**; *-Metatech Corporation, Goleta, CA, USA*	253
9:20am -9:40am	TH-AM-B1-3 **Transient Analysis of the Yagi-Uda Antenna on a House Illuminated by a High-Power Electromagnetic Pulse (HPEMP)** **Jian Wang**; *-Shanghai Jiao Tong University, Shanghai, China;* **Jiang Zheng, Wen-Yan Yin**; *-Zhe Jiang University, Hangzhou, China*	335
9:40am -10:00am	TH-AM-B1-4 **A Stochastic Process and Chaos Interpretation of HPE and HPM Effects on Electronic Systems** **Ira Kohlberg**; *-Kohlberg Associates, Reston, Virginia, USA*	350
10:00am -10:20am	TH-AM-B1-5 **Time-Domain Analysis of an Electromagnetic Lens for a Half Impulse Radiating Antenna** **F. Vega, F. Rachidi, N. Mora**; *-Swiss Federal Institute of Technology of Lausanne, Lausanne, Switzerland;* **F. Roman**; *-National University of Colombia, Bogota, Colombia;* **N. Peña**; *-Los Andes University, Bogota, Colombia*	406
TH-AM-B2: SS-18-Advances on Radiated Measurements-B Chairs: **Dr. Zhong Chen, Dr. Kefeng Liu**		
10:40am -11:00am	TH-AM-B2-1 **Time-Domain Evaluation of Anechoic Environments up to 325 GHz** **Thorsten Schrader, Kai Baaske, Mohammed Salhi, Thomas Kleine-Ostmann**; *-Physikalisch-Technische Bundesanstalt, Braunschweig, Germany*	174

11:00am -11:20am	TH-AM-B2-2 **Using the Calculable Dipole Antenna for Antenna Calibration and Validation of EMC Test Sites** **Martin Alexander**; *-National Physical Laboratory, Teddington, Middx, UK*	175
11:20am -11:40am	TH-AM-B2-3 **CISPR Standard for Calibration of EMC Antennas** **Martin Alexander**; *-National Physical Laboratory, Teddington, Middx, UK;* **Professor Akira Sugiura**; *-National Institute of Information and Communications Technology, Tokyo, Japan*	176
11:40am -12:00am	TH-AM-B2-4 **Intercomparison of VHF/UHF Antenna Calibration among Japanese Testing Labs** **Katsumi Fujii, Akira Sugiura, Yukio Yamanaka**; *-National Institute of Information & Communications Technology, Tokyo, Japan*	256
12:00am -12:20pm	TH-AM-B2-5 **Advances in Complex Fit Normalized Site Attenuation using Log Periodic Dipole Arrays** **Zhong Chen**; *-ETS-Lindgren, Cedar Park, United States*	59
TH-PM-B1: TC-6-Power System EMC Chairs: **Prof. Xiang Cui, Dr. Kai-Sang Lock**		
1:20pm -1:40pm	TH-PM-B1-1 **Prediction of Conducted Emissions of DC/DC Converters for Space Applications** **Giordano Spadacini, Diego Bellan, Sergio A. Pignari**; *-Politecnico di Milano, Milan, Italy*; **Roberto Grossi**; *-Carlo Gavazzi Space S.p.A., Milan, Italy*; **Filippo Marliani**; *-European Space Research and Technology Centre (ESTEC), European Space Agency (ESA), Noordwijk, The Netherlands*	410
1:40pm -2:00pm	TH-PM-B1-2 **Time-frequency Analysis of Radiated Emissions within a Substation Installed with SVC Equipment** **Li Zhang, Jinxin Huang, Qingmin Li, Wei Wang**; *-Shandong University, Shandong, China*; **W. H. Siew**; *-University of Strathclyde, Scotland, United Kingdom*	124
2:00pm -2:20pm	TH-PM-B1-3 **An Improved Magnetic Circuit Model of Power Transformers under DC Bias Excitation** **Hongzhi LI, Xiang CUI, Tiebing LU**; *-North China Electric Power University, Beijing, China;* **Zhiguang CHENG, Dongsheng LIU**; *-Baoding Tianwei group co., LTD, Hebei, China*	90
2:20pm -2:40pm	TH-PM-B1-4 **Wireless Distributed EMI Measurement System** **K.Y. Liu**, **W.H.Siew**, **R.W.Stewart**; *-University of Strathclyde, Glasgow, UK;* **Q.M.Li**; *-Shandong University, Jinan, Shandong, China*	297
2:40pm -3:00pm	TH-PM-B1-5 **Equivalent Disturbing Current Limit for HVDC Project in New Period** **Zhang Xiao-wu**; *-Wuhan University, Wuhan, Hubei, China;* **Li Ni, Wu Xiong**; *-State Grid Electric Power Research Institute, Wuhan, Hube, China*	379
3:00pm -3:20pm	TH-PM-B1-6 **An Electromagnetic Effect Calculation Method for Engineering Design on Oil/gas Pipelines due to 1000kV AC Transmission Line in Single-phase Ground Fault** **Wenliang Zhang; Jun Jiang; Jian Guo; Jiayu Lu**; *-China Electric Power Research Institute, Beijing, China*	574
TH-PM-B2: TC-9-Antenna and Propagation Issues-B Chairs: **Prof. Poman So, Dr. Yu Wenhua**		
3:40pm -4:00pm	TH-PM-B2-1 **Experimental Characterization of Electromagnetic Propagation of a Hospital from 55-1950MHz** **Nickolas J. LaSorte, Yohann Burette, Hazem H. Refai**; *-University of Oklahoma, Oklahoma, USA*	249
4:00pm -4:20pm	TH-PM-B2-2 **Experimental Study of Mutual Coupling Compensation in Direction Finding using a Compact Antenna Array** **Hoi-Shun Lui**; *-Chalmers University of Technology, Gothenburg, Sweden;* **Yantao Yu, Hon Tat Hui, Mook Seng Leong**; *-National University of Singapore, Singapore, Singapore*	278

4:20pm -4:40pm	TH-PM-B2-3 **Wideband Microstrip-Fed Slot Loop Antenna** **Y.K.Cho, J.H, Yoo, E.J.Kim, Y.Kim, Y.S.Lee**; *-Kumoh Natl. Institute of Tech., Kyungbuk, Republic of Korea*	279
4:40pm -5:00pm	TH-PM-B2-4 **An EC-based Optimization Technique for Designing the EBG Structures with Square-loop FSSs** **Yao Cui**; *-Northwestern Polytechnical University, Xi'an, China;* **Xinyu Hou**; *-University of Electronic Science and Technology of China, Chengdu, China*	340
5:00pm -5:20pm	TH-PM-B2-5 **Comparison of Base Station Antenna with 65° and 105° Beamwidth** **Azhari Bin Asrokin, Anas Bin Abas, Rizal Helmy Bin Basri, Norman Bin Jamlus**; *-Telekom Research & Development Sdn Bhd, Selangor Darul Ehsan, Malaysia*	488
5:20pm -5:40pm	TH-PM-B2-6 **Detection of DVDs in a Stack by a UHF RFID System** **Zhonghao HU, Peter Cole**; *-The University of Adelaide, Adelaide, Australia*	207

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TH-AM-C1: SS-2-Recent Progress in EMC Numerical Modeling-A Chairs: **Dr. Qingsheng Zeng, Prof. Qi-Jun Zhang**		**No.**
8:40am -9:00am	TH-AM-C1-1 **Real-Coefficient AFS Derived for the Equivalent Circuit Modelling of RF Passives (Invited)** **Sungtek Kahng, Jeongho Ju, H. Kim, D. Lim**; *-University of Incheon, Incheon, Korea;* **H. Bak**; *-Electronic Telecommunication Research Institute, Daejon, Korea*	535
9:00am -9:20am	TH-AM-C2-1 **On the Modelling of Transient Scattering under Ultra Wideband Short-Pulse Electromagnetic Excitation** **Hoi-Shun Lui**; *-Chalmers University of Technology, Gothenburg, Sweden;* **Nicholas V. Shuley**; *-The University of Queensland, Brisbane, Australia*	294
9:20am -9:40am	TH-AM-C1-3 **Hybrid Lower- and Higher-Order Basis Functions on Mixed Triangle and NURBS Model** **Zi-Liang Liu, Chao-Fu Wang**; *-National University of Singapore, Singapore, Singapore*	197
9:40am -10:00am	TH-AM-C1-4 **Behavioral Modeling for Electromagnetic Immunity Analysis of Electronic Systems** **Xian-Ke Gao, Eng-Kee Chua, and Er-Ping Li**; *-Institute of High Performance Computing, Singapore, Singapore*	198
10:00am -10:20am	TH-AM-C1-5 **Effect of Substrate Temperature Dependence on Six-port Reflectometer Performance** **Sakol Julrat, Mitchai Chongcheawchamnan, Thanate Khaorapapong; -***Prince of Songkla University, Hatyai, Songkhla, Thailand*	447
TH-AM-C2: SS-2-Recent Progress in EMC Numerical Modeling-B Chairs: **Dr. Qingsheng Zeng, Dr. Yu Wenhua**		
10:40am -11:00am	TH-AM-C2-1 **Neural Network Modeling for Electromagnetic Structures** **Shaowei Liao, Jianhua Xu**; *-University of Electronic Science and Technology of China, Chengdu, China;* **Lei Zhang, Qi-Jun Zhang**; *-Carleton University, Ottawa, ON, Canada*	22
11:00am -11:20am	TH-AM-C2-2 **Numerical Modeling of Electromagnetic Structures with TLM on NVIDIA Graphics Processors** **Poman So**; *-University of Victoria, Victoria, BC, Canada*	361
11:20am -11:40am	TH-AM-C2-3 **Analysis of Transient Electromagnetic Scattering from Arbitrary Objects** **Shinichiro Ohnuki, Yuya Kitaoka, Seiya Kishimoto**; *-Nihon University, Tokyo, Japan*	507

11:40am -12:00am	TH-AM-C2-4 **Transient Analysis of Electromagnetic Wave Reflection from a Stratified Medium** **Qingsheng Zeng**; *-Communications Research Centre Canada, Ottawa, Canada;* **Gilles Y. Delisle;** *-Technology Integration Centre, Quebec, Canada*	508
12:00am -12:20pm	TH-AM-C2-5 **High Performance Simulation Techniques using Parallel Processing FDTD Method** **Wenhua Yu, Xiaoling Yang, Yongjun Liu, Raj Mittra; -***The Pennsylvania State University, PA, USA*	151
TH-PM-C1: TC-13-Computational Electromagnetics-C Chairs: **Prof. Jian-Ming Jin, Dr. Er-Ping Li**		
1:20pm -1:40pm	TH-PM-C1-1 **Higher Order Hierarchical Method of Moments for 3-D Electromagnetic Scattering** **C. Q. Deng, X. Q. Sheng**; *-Beijing Institute of Technology, Beijing, China;*	364
1:40pm -2:00pm	TH-PM-C1-2 **Notes on the Tuning of a Deterministic Propagation Model in the Reverberation Chamber** **Kamil Staniec**; *-Wroclaw University of Technology, Wroclaw, Poland*	421
2:00pm -2:20pm	TH-PM-C1-3 **A Complete Framework for the Modeling of Linear and Nonlinear Dispersion Effects with FDTD** **S. Schild, N. Kuster**; *-Foundation for Research on Information Technologies in Society, Zurich, Switzerland*; **N. Chavannes**; *-Schmid & Partner Engineering AG, Zurich, Switzerland*	435
2:20pm -2:40pm	TH-PM-C1-4 **Particle Swarm Optimization Method for Complex Permittivity Extraction of Dispersive Materials** **Marcello Artioli, Mauriçio D. Perez, Ugo Reggiani, Leonardo Sandrolini**; *-University of Bologna, Bologna, Italy*	471
2:40pm -3:00pm	TH-PM-C1-5 **EMC simulation of an automotive display system** **David P. Johns**; *-CST of America Inc, Framingham MA, USA*; **Scott Mee**; *-Johnson Controls, Holland, USA*	482
3:00pm -3:20pm	TH-PM-C1-6 **Time-Domain Analysis of Closed Structures Singularities** **Ramin Aghajafari**; *-Islamic Azad University, Karaj, Iran*	167
TH-PM-C2: SS-3-EMC Computer Modeling and Simulation Chairs: **Prof. Junwei Lu, Prof. Joungho Kim**		
3:40pm -4:00pm	TH-PM-C2-1 **Using CUDA Enabled FDTD Simulations To Solve Multi-Gigahertz EMI Challenges** **Davy Pissoort**; *-FMEC-KHBO, Dept. IW&T, Oostende, Belgium*; **Chen Wang, Hany Fahmy**; *-Nvidia, Santa Clara, USA*; **Amolak Badesha;** *-Agilent Technologies, Santa Clara, USA*	308
4:00pm -4:20pm	TH-PM-C2-2 **Microwave Wedge Absorber Design using Rice Husk – An Evaluation on Placement Variation** **H. Nornikman, P. J Soh, F Malek, A. A. H Azremi, F. H Wee, R. B Ahmad;** *University Malaysia Perlis, Perlis, Malaysia*	28
4:20pm -4:40pm	TH-PM-C2-3 **Auto Dissection of Entity with Three-Dimensional Netwok based on FDTD** **L.L. Chen; C. Liao; X.Y. Xia**; *-Southwest Jiaotong University, Chengdu, Sichuan, China*	76
4:40pm -5:00pm	TH-PM-C2-4 **BJT Circuits Simulation including Self-Heating Effect using FDTD Method** **A. R. Amin, A. Salehi, M.H. Ghezelayagh**; *-K. N. Toosi University of Technology, Seyed Khandan, Tehran, Iran*	30
5:00pm -5:20pm	TH-PM-C2-5 **Research on shielding effectiveness of enclosure with apertures** **Xufeng Zhang, Weidong Zhang, Xiang Cui**; *-North China Electric Power University, Baoding, China*	229

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-5:40pm	**EMC Modelling of Dual Die CPU with a Heatsink**	
	Boyuan Zhu, Junwei Lu; *-Griffith University, Brisbane, Australia*; **Erping Li**; *-Electromagnetics and Electronics Division, Astar, Singapore*	

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TH-AM-D1: IF-1-Emission Measurements - Novel and Alternative Methods Chairs: **Dr. Stephan Braun**		
08:40am	TH-AM-D1-1	
-09:00am	**Progress in International EMC Standardization**	
	Stephan Braun; -*GAUSS Instruments GmbH, Munich, Germany*	
09:00am	TH-AM-D1-2	
-09:20am	**Progress in EMI Instrumentation and Emission Measurements**	
	Christian HOFFMANN, Hassan SLIN, Peter RUSSER; -*Munich University of Technology, Germany***;** **Arnd FRECH, Stephan BRAUN; -***GAUSS Instruments GmbH, Munich, Germany*	
09:20am	TH-AM-D1-3	
-09:40am	**Digital Services - Novel Methods to Investigate the Potential of Interfering Sources**	
	Wolfgang WINTER , Markus HERBRIG; -*emv GmbH**,** *Germany*	
09:40am	TH-AM-D1-4	
-10:20am	**Significance of Correct dwell Time during Emission Measurements**	
	Stephan Braun; -*GAUSS Instruments GmbH, Munich, Germany*	
TH-AM-D2: SS-1- EMC Test and Measurement-C Chairs: **Prof. Han-Nien Lin, Dr. Boris Levitas**		**No.**
10:40am	TH-AM-D2-1	541
-11:00am	**Magnetostatic Cleanliness of Spacecraft (Invited)**	
	K.Mehlem; *-Sonnenweg, Hoehr-Grenzhausen, Germany;* **A.Wiegand**; *-Astos Solution GmbH Grund, Unterkirnach, Germany*	
11:00am	TH-AM-D2-2	519
-11:20am	**Estimate the Measurement Uncertainty of Broadband Antenna (30MHz to 1GHz) Calibration System**	
	Jung-Chun Tsai, **Yung-Cheng Tsai**; *-Measurement/Calibration Technology Department, Electronics Testing Center, Taoyuan County, Chinese Taipei;* **Liang-Yang Lin, Cheng-Chang Chen;** *-EMC Department, Bureau of Standards Metrology and Inspection MOEA, Chinese Taipei*	
11:20am	TH-AM-D2-3	446
-11:40am	**Measurement and Analysis on the Radiated Emission Below 30 MHz from the Plasma TV Sets**	
	Tae Heon Jang; *-EMC Technology Center, Korea Testing Laboratory, Ansan-si, Gyeonggi-do, Korea*; **Joong Geun Rhee**; *-Hanyang University, Ansan, Gyeonggi-do, Korea*	
11:40am	TH-AM-D2-4	369
-12:00am	**Influence of Power Shielded Cable and Ground on Distribution of Common Mode Currents Flowing in Variable-Speed AC Motor Drive Systems**	
	C. Jettanasen; *-King Mongkut's Institute of Technology Ladkrabang (KMITL), Bangkok, Thailand*	
12:00am	TH-AM-D2-5	458
-12:20pm	**Aspects Concerning the Conducted Electromagnetic Disturbances Owing to Static Converters**	
	Petre-Marian Nicolae, Ileana-Diana Nicolae; *-University of Craiova, Craiova, Romania*; **George Mihai, Marian Duta**; *-ICMET Craiova, Craiova, Romania*	
TH-PM-D1: TC-18-EMC Material Chairs: **Prof. James L. Drewniak, Prof. Zhenghe Feng**		
1:20pm	TH-PM-D1-1	98
-1:40pm	**Comparison of High Performance Alloys in Fingerstock Shielding Application**	
	Colin Tong; *-Laird technologies, Schaumburg, IL, USA*; **Jimmy Johnson**; *-Brush Wellman Inc., Mayfield Heights, OH, USA*	

1:40pm -2:00pm	TH-PM-D1-2 **Electromagnetic Shielding Analysis of Printed Flexible Meshed Screens** **L. B. Wang, K. Y. See**; *-Nanyang Technological University, Singapore, Singapore*; **W. Y. Chang;** *-DSO National Laboratories Guided Systems Division, Singapore, Singapore;* **C. W. Lu, S. T. Ng**; *-Singapore Institute of Manufacturing Technology, Singapore, Singapore*	213
2:00pm -2:20pm	TH-PM-D1-3 **Electromagnetic Interference Shielding Effectiveness of Carbon-Nanotube Based Coatings** **Ping Li, Yin Xijiang**; *-Advanced Materials Technology Centre, Singapore, Singapore*; **Yueyan Shan**; *-National Metrology Centre, Singapore, Singapore*; **Junhong Deng**; *-EEC Centre, TUV SUD PSB Pte Ltd, Singapore, Singapore*	263
2:20pm -2:40pm	TH-PM-D1-4 **Environmentally Friendly Composite Coating Steels for Board Level Shielding Application** **Colin Tong**; *-Laird technologies, Schaumburg, USA*	301
2:40pm -3:00pm	TH-PM-D1-5 **On the Origin of Anisotropic Shielding of Non-magnetic Plasma Column** **Max Chung**; *-Southern Taiwan University, Tainan, Chinese Taipei*; **Shiaw Hwei Chen**; *-Atomic Energy Commission, Taoyuan, Chinese Taipei*	431
3:00pm -3:20pm	TH-PM-D1-6 **Correlation Reduction in Antennas with Metamaterial Based on Newly Designed SRRs** **Jianing Zhao, Jue Wang**; *-Southeast University, Nanjing, Jiangsu, China*	443
TH-PM-D2: TC-2-EMC Measurement Technique-B Chairs: **Prof. Hazem Refail, Dr. Mart Coenen**		
3:40pm -4:00pm	TH-PM-D2-1 **Radiation Patterns of Unintentional Antennas: Estimations Estimates, Simulations, and Measurements (Invited)** **Perry Wilson**; *-Electromagnetics Division, National Institute of Standards and Technology Boulder, CO 80305, USA*	565
4:00pm -4:20pm	TH-PM-D2-2 **Investigation and Comparison of Different Methods for EM Clamp Calibration** **Ralf Heinrich, Dieter Dutschmann**; *-TESEQ GmbH, Berlin, Germany*	108
4:20pm -4:40pm	TH-PM-D2-3 **Uncertainty Contribution of the EMI Test Receiver in RF Disturbance Measurements** **Jens Medler**; *-Rohde & Schwarz GmbH & Co. KG, Munich, Germany*	125
4:40pm -5:00pm	TH-PM-D2-4 **Study on Impedance Extraction Methods Applied in Conductive EMI Source Modeling** **Yang Zhao, Xiaoquan Lu, Yinghua Dong, Yongchao Luo, Wei Yan, Rong Rong**; *-Nanjing Normal University, Nanjing, China*; **Yang Zhao**; *-Southeast University, Nanjing, China*	129
5:00pm -5:20pm	TH-PM-D2-5 **EMF Meters for Surveying Purposes; Calibration and Validation** **Pawel Bienkowski, Hubert Trzaska**; *Wroclaw University of -Technology, Wroclaw, Poland*	206
5:20pm -5:40pm	TH-PM-D2-6 **Experimental Analysis of the Performance of a Time-Reversal Electromagnetic Chamber** **HoumamMoussa, AndreaCozza, Michel Cauterman**; *-CNRS, Supelec-Univ.Paris-Sud, Cedex, France*	214
5:40pm -6:00pm	TH-PM-D2-7 **Active Transmitters in a Reverberation Chamber** **Markus Rothenhaeusler; -***EADS Defence & Security, Military Air Systems, Germany;* **Matthias Hahn;** *Wehrtechnische Dienststelle 81, GF 410, Germany*	520

Thursday, 15 April 2010 Room 308

TH-AM-F1: TM-2-Topical Meeting on Advanced Research in EMC of Ics-A Chairs: **Prof. Sonia Ben Dhia, Prof. Fabian Vargas**	**No.**

8:40am -9:00am	Oppening Addresses of Topical Meeting	
9:00am -9:20am	TH-AM-F1-1 **Lifetime issues, Robustness Consequences and Reliability Challenges for Very Deep Sub Micron Technologies** **Philippe Perdu**; *-CNES, Toulouse, France*	464
9:20am -9:40am	TH-AM-F1-2 **Impact of NBTI on EMC Behaviours of CMOS Inverter** **R. Fernandez**, **N. Berbel**, **I. Gil**; *-Universitat Politècnica de Catalunya, Terrassa, SPAIN*; **M. Morata**; *-Escola Universitària Salesiana de Sarrià, Barcelona, SPAIN*	247
9:40am -10:00am	TH-AM-F1-3 **Ageing effect on Immunity of a mixed signal IC** **Binhong Li**, **Alexandre Boyer**, **Sonia Ben Dhia, Christophe Lemoine**; *-INSA, University of Toulouse, Toulouse, France*	296
10:00am -10:20am	TH-AM-F1-4 **Robustness of ESD Protection Structures against Automotive Transient Disturbances** **Bernd Deutschmann**, **Filippo Magrini**, **Yiqun Cao**; *-Infineon Technologies AG, Neubiberg, Germany*	455
TH-AM-F2: TM-2-Topical Meeting on Advanced Research in EMC of Ics-B Chairs: **Dr. Alexandre Boyer, Dr. Mart Coenen**		
10:40am -11:00am	TH-AM-F2-1 **On-chip Sampling and EMC Modeling of I/Os Switching to Evaluate Conducted RF Disturbances Propagation** **M. Deobarro**, **B. Vrignon**, **J. Shepherd**; *-Freescale Semiconductor, Toulouse Cedex, France*; **M. Deobarro**, **S. Ben Dhia**; *-University of Toulouse, Toulouse cedex, France*	270
11:00am -11:20am	TH-AM-F2-2 **Incoherence Analysis and its Application to Time Domain EM Analysis of Secure Circuits** **Amine Dehbaoui**, **Thomas Ordas**, **Victor Lomne**, **Philippe Maurine**, **Lionel Torres Michel Robert**; *-University Montpellier, Montpellier, France*	352
11:20am -11:40am	TH-AM-F2-3 **Physics-based Via Model Development and Verification** **Jianmin Zhang, Qinghua B. Chen;** *-Cisco Systems, San Jose, CA, USA;* **James L. Drewniak;** *-Missouri University of Science and Technology, Rolla, MO, USA;* **Antonio Orlandi; -***University of L'Aquila, L'Aquila, Italy*	321
11:40am -12:00am	TH-AM-F2-4 **On the Comparison of Synchronous versus Asynchronous Circuits under the Scope of Conducted Power-Supply Noise** **L. F. Cristófoli1**, **A. Henglez**, **J. Benfica**, **L. Bolzani**, **F. Vargas**; *-Catholic University, Porto Alegre, Brazil*; **A. Atienza**, **F. Silva**; *-Universitat Politecnica de Catalunya, Barcelona, Spain*	476
12:00am -12:20pm	TH-AM-F2-5 **Measurement Methodology for Establishing an IC ESD Sensitivity Database** **Zhen Li**, **Jiang Xiao**, **Byongsu Seol**, **Jongsung Lee, David Pommerenke**; *-Missouri University of Science and Technology, Rolla, Missouri, USA*	463
TH-PM-F1: TM-2-Topical Meeting on Advanced Research in EMC of Ics-C Chairs: **Prof. Sonia Ben Dhia, Prof. Raul Fernandez Garcia**		
1:20pm -1:40pm	TH-PM-F1-1 **Development Methodology: From System and Design Architecture to EMC Improvement** **F. Galtié1**, **B. Vrignon**; *-Freescale Semiconductor, Toulouse, France*	444
1:40pm -2:00pm	TH-PM-F1-2 **Noise Reduction in Nanometre CMOS** **Mart Coenen**; *-EMCMCC bv, Eindhoven, Netherlands*; **Arthur van Roermund**; *-Eindhoven University of Technology, Eindhoven, Netherlands*	356

2:00pm -2:20pm	TH-PM-F1-3 **An On-/Off-Chip Co-Design Methodology for Suppressing Radiated Emissions from the High-Definition DTV System** **WeiDa Guo, Jimmy Hsu, TungYang Chen, Sam Yang, Renee Lee**; *-Himax Technologies, Inc., Tainan, Chinese Taipei*	452
2:20pm -2:40pm	TH-PM-F1-4 **Simple and Highly Accurate Quasi-Static Model for High Speed MIS Microstrip Interconnects on Lossy Substrate in RF MEMS and Integrated Circuits** **Avanish Bhadauria**; *-Central Electronics Engineering Research Institute, Pilani, India*; **Reeshav Kumar**; *-Texas A&M University, USA*	415
2:40pm -3:00pm	TH-PM-F1-5 **FPGA Programmable PLL Impact on EMC Behavior** **Shih-Yi Yuan, Cheng-Hsieh Wu, Shry-Sann Liao**; *-Feng Chia University, Taichung, Chinese Taipei*	148
3:00pm -3:20pm	TH-PM-F1-6 **A New Methodology to Measure Electromagnetic Interferences in 3G Mobile Platform** **Stéphane Baffreau, Samuel Akue-Boulingui;** *-University of Toulouse, Tarbes, France;* **Céline Dupoux, Nicolas Bouvier, Bertrand Vrignon;** *-Freescale Semiconducteur France;* **Etienne Sicard, Alexandre Boyer**; *-University of Toulouse, Toulouse France*	483
TH-PM-F2: TM-2-Topical Meeting on Advanced Research in EMC of Ics-D Chairs: **Prof. Bertrand Vrignon, Prof. Shih-Yi Yuan**		
3:40pm -4:00pm	TH-PM-F2-1 **A New Filtering Technique to Increasing the Immunity of Power Transistors to RFI** **Calogero Bona**; *-Politecnico di Torino, Turin, Italy;* **Franco Fiori**; *-Politecnico di Torino C.so Duca degli Abruzzi 24, Turin, Italy*	462
4:00pm -4:20pm	TH-PM-F2-2 **In Vitro Protocol to Study the Electromagnetic Interaction of RFIDs and Infusion Pumps** **Nickolas LaSorte, Ifeatu B. Akunne**; **Hazem H. Refai**; *-University of Oklahoma, Tulsa, Oklahoma, USA*	126
4:20pm -4:40pm	TH-PM-F2-3 **Transient Analysis of Dispersive Transmission Lines with Incident Electromagnetic Fields** **Min Tang, Junfa Mao, Xiaochun Li, Linsheng Wu**; *-Shanghai Jiao Tong University, Shanghai, China*	194
4:40pm -5:00pm	TH-PM-F2-4 **Relation between the PCB Near Field and the Common Mode Coupling from the PCB to Cables** **Christian Poschalko**; *-Robert Bosch AG, Vienna, Austria; Siegfried Selberherr; -Technische Universitaet Wien, Vienna, AUSTRIA;* **Siegfried Selberherr**; *-Technische Universitaet Wien Gusshausstrasse Vienna, AUSTRIA*	80
4:40pm -5:20pm	TH-PM-F2-5 **The Power Stability of FPGA-based Microcontroller Design and Measurement** **Shih-Yi Yuan, Pi-Shun Chang, Shry-Sann Liao**; *-Feng Chia University, Taiwan, Chinese Taipei*	146

Thursday, 15 April 2010 Room 307

TH-AM-E1: SS-14-Overview of EMC in Europe Chairs: **Prof. Marcello D'Amore, Prof. Christos Christopoulos**		
8:40am -9:05am	TH-AM-E1-1 **EMC History** **Marcello D'Amore, -** *Sapienza University of Rome, Italy*	
9:05am -9:30am	TH-AM-E1-2 **EMC Research-I** **Christos Christopoulos; -***University of Nottingham, UK*	
9:30am -9:55am	TH-AM-E1-2 **EMC Research-II** **Mauro Feliziani; -***University of L'Aquila, Italy*	

9:55am -10:20am	TH-AM-E1-4 **EMC Industrial Development** **Mart Coenen; -***EMCMCCbv, Eindhoven, The Netherlands*	
10:00am -10:20am	TH-AM-E1-5 **EMC Standards** **Jens Medler; -***Rohde & Schwarz, Munchen, Germany*	
TH-AM-E2: TC-14- Nanotechnology in EMC Chairs: **Prof. Marcello D'Amore, Dr. Yoshiki Kayano**		
10:40am -11:00am	TH-AM-E2-1 **Carbon Nanotube Additives for Non-Destructive Evaluation and Electromagnetic Compatibility of Composites** **Tim McDonald**; **Jennifer Kitaygorsky**; *-Electro Magnetic Applications, Inc., Lakewood, CO, USA*	60
11:00am -11:20am	TH-AM-E2-2 **SPICE-Model of Multiwall Carbon Nanotube Through-Hole Vias** **Marcello D'Amore**, **Maria Sabrina Sarto, Alessio Tamburrano**; *-University of Rome, Rome, Italy*	426
11:20am -11:40am	TH-AM-E2-3 **Geometric Effects in Designing Bow-tie Nanoantenna for Optical Resonance Investigation** **Yu-Ming Wu**; **Le-Wei Li**; *-National University of Singapore, Singapore, Singapore*; **Liu Bo**; *-Data Storage Institute, Agency for Science, Technology and Research, Singapore, Singapore*	51
11:40am -12:00am	TH-AM-E2-4 **Calculation of Passive Intermodulation between Rough Waveguide Flanges Induced by Quantum Tunneling** **Ming Ye**, **Yongning He**; *-Xi'an Jiaotong University, Xi'an, Shanxi, China*; **Xinbo Wang**, **Wanzhao Cui**; *-Institute of Space Radio Technology, Xi'an, Shanxi, China*	423
12:00am -12:20pm	TH-AM-E2-5 **Negative Group Delay Circuit fabricated in an Integrated Circuit Chip** **Yoshiki Kayano**, **Ryosuke Yanagisawa**, **Hiroshi Inoue**; *-Akita University, Akita, Japan*	311

Topical Meeting on Lightning Protection

Tuesday, 13 April 2010 Room 307

TU-PM-E1: TM-1-A-Topical Meeting on Lightning Protection Chairs: **Prof. V. Rakov, Prof. Farhad Rachidi, Prof. S. Yokoyama**		
1:20pm -1:40pm	**Opening Ceremony**	
1:40pm -2:30pm	TU-PM-E1-1 **Lightning Parameters for Engineering Applications (Keynote Speech)** **Vladimir A. Rakov; -***University of Florida, Gainesville, FL, USA*	546
2:30pm -3:20pm	TU-PM-E1-2 **A Survey on CIGRÉ and IEEE Procedures for the Estimation of the Lightning Performance of Overhead Transmission lines (Keynote Speech)** **Carlo Alberto Nucci; -***University of Bologna, Bologna, Italy*	548
TU-PM-E2: TM-1-B- Topical Meeting on Lightning Protection: Lightning Locating Systems Chairs: **Prof. C. Bouquegneau, Prof. S. Yokoyama**		
3:40pm -4:05pm	TU-PM-E2-1 **VHF Broadband Interferometer Observations and Micro-structure of Lightning Discharge (Invited)** **Manabu Akita, Zen KAWASAKI; -***Osaka University, Osaka, Japan*	284

4:05pm -4:20pm	TU-PM-E2-2 **The New Lightning Detection System in China: Its Method and Performance** **Jiahong Chen;** *-State Grid Electric Power Research Institute, Wuhan city, Hubei province, China*; **Yubin Wu; -***Huazhong University of Science and Technology, Wuhan city, Hubei province, China*; **Zhibin Zhao;** *-North China Electric Power University, Baoding city, Hebei province, China*	402
4:20pm -4:35pm	TU-PM-E2-3 **Evaluation of Lightning Location Accuracy of JLDN with a Lightning Video Camera System** **Michihiro Matsui;** *-Franklin Japan Corporation, Sagamihara, Kanagawa, Japan*; **Nobuyoshi Takano;** *-Sankosha Corporation, Sagamihara, Kanagawa, Japan*	182
4:35pm -4:50pm	TU-PM-E2-4 **Temporal and Spatial Characteristics of Lightning Activity versus Terrain in Hong Kong** **Mingli Chen, Dong Zheng, Yaping Du;** *-Hong Kong Polytechnic University, Hong Kong, Chin*; **Dong Zheng, Yijun Zhang;** *-Chinese Academy of Meteorological Sciences, Beijing, China*	199
4:50pm -5:05pm	TU-PM-E2-5 **Lightning Observation Results by New LLS that Uses LS8000 and CP8000** **Masahiro Tatsumi, Teruo Idogawa, Soichi Nakamura, Shuji Higashi;** *-Sankosha Corporation, Kanagawa, Japan*; **Atsushi Sezaki, Kenzo Uenishi;** *-Kansai Electric Power Co., Inc., Osaka, Japan*	243
5:05pm -5:20pm	TU-PM-E2-6 **A Two-Station Lightning Location Method based on a Combination of Difference of Time of Arrival and Amplitude Attenuation** **M. Rubinstein, Farhad Rachidi, Abraham Rubinstein, Felix Vega;** *-University of Applied Sciences of Western Switzerland, Yverdon, Switzerland;* **Carlos Romero;** *-Swiss Federal Institute of Technology, Ecublens, Switzerland*	269
5:20pm -5:35pm	TU-PM-E2-7 **Fast Electric Field Change Pulses Location Technique** **Dongfang Wang; -***Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, P. R. China*; **Tie Yuan; -***Lanzhou University, Lanzhou, P.R. China;* **Guangshu Zhang, Tong Zhang; -***Cold and Arid Regions Environmental and Engineering Research Institute Chinese Academy of Sciences, Lanzhou, P.R. China*	318
5:35pm -5: 50pm	TU-PM-E2-8 **Observations of VHF Source Radiated by Lightning using Short Baseline Technology** **Dongjie Cao; Xiushu Qie, Shu Duan, Jing Yang, Yuejian Xuan; -***Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China*	131

Wednesday, 14 April 2010 Room 307

WE-AM-E1: TM-1-C- Topical Meeting on Lightning Protection: Lightning Strikes to Tall Structures Chairs: **Prof. V. Rakov, Prof. M. Ishii**	
8:40am -9:05am	WE-AM-E1-1 **On the Propagation of Current Pulses along Tall Structures Struck by Lightning (Invited)** **Abdolhamid Shoory, Felix Vega, Farhad Rachidi; -***Swiss Federal Institute of Technology, Lausanne, Switzerland*; **Marcos Rubinstein; -***University of Applied Sciences of Western Switzerland, Yverdon, Switzerland*	330
9:05am -9:30am	WE-AM-E1-2 **Early Phases of Lightning Currents (Invited)** **Visacro Silverio, Murta Vale Maria Helena, Teixeira Andre; -***Federal University of Minas Gerais, Belo Horizonte, Brazil*	469
9:30am -9:45am	WE-AM-E1-3 **Simultaneous Current and Electric Field Observations of Upward Negative Leaders initiated from the Gaisberg Tower** **Helin Zhou, Rajeev Thottappillil; -***Royal Institute of Technology, Stockholm, Sweden*; **Gerhard Diendorfer, Hannes Pichler;** *-OVE, Dept ALDIS, Vienna, Austria*; **Martin Mair;** *-Central University of Meteorology and Geodynamics, Vienna, Austria*	150

9:45am -10:00am	WE-AM-E1-4 **Observation and Preliminary Analysis on the Attachment Process of Lightning Flashes Striking on High Structures** **Weitao Lu, Yang Zhang, Enwei Zhou, Yijun Zhang;** *-Chinese Academy of Meteorological Sciences (CAMS), Beijing, P. R. China*; **Luwen Chen, Zhihui Huang, Bin Li; -***Lightning Protection Center of Guangdong Province, Guangdong, P. R. China*	251
10:00am -10:15am	WE-AM-E1-5 **Experimental Study on Surge Current to Customer's Facility Owing to Lightning Stroke on Television Antenna** **Seiji Furukawa, Akira Asakawa, Shigeru Yokoyama; -***Central Research Institute of Electric Power Industry, Nagasaka, Japan*; **Takeshi Hosokawa; -***Former EMAJ, Matsugaoka, Japan*	157
WE-AM-E2: TM-1-D- Topical Meeting on Lightning Protection: Lightning Protection of Buildings or Other Objects Chairs: **Prof. A.P.J. van Deursen, Prof. Zen Kawasaki**		
10:40am -11:05am	WE-AM-E2-1 **Probability of Lightning Hits to Tall Structures Taking Account of Upward Lightning (Invited)** **M. Ishii, M. Saito, F. Fujii; -***The University of Tokyo, Tokyo, Japan*; **A. Sugita; -***Franklin Japan Co, Japan*	522
11:05am -11:20am	WE-AM-E2-2 **New Lightning Protection Standardization Trends for the Lightning Risk Assessment; Use of the Risk Multilingual 3 Software** **C.Bouquegneau, P. Lecomte; -***University of Mons, Mons, Belgium*	477
11:20am -11:35am	WE -AM-E2-3 **Lightning Protection of a Pharmaceutical Plant, Measurements and Modelling** **G. Bargboer, A.P.J. van Deursen; -***Eindhoven University of Technology, Eindhoven, Netherlands*	261
11:35am -11:50am	WE-AM-E2-4 **Transient Current Burst Analysis induced in Cable Harness due to Direct Lightning Strike on Aircraft** **Zhang Min, Huang Zhiyong;** *-TongJi University, Shanghai, P. R. China*	317
11:50am -12:05pm	WE-AM-E2-5 **A Study of Transient Magnetic Fields in a Wind Turbine Nacelle** **Akihiro Ametani; -***Doshisha University, Japan*; **Kazuo Yamamoto; -***Kobe City College of Technology, Japan*	380
12:05pm -12:20pm	WE-AM-E2-6 **Development of Lightning Electromagnetic Impulse Simulator on Buildings** **Hajime Uchida, Yoshiaki Mori, Nobusato Kobayashi, Shinji Yanai;** *-Taisei Corporation, Tokyo, Japan;* **Yuichi Takahashi, Kaname Yonezawa, Teruo Idogawa, Masaaki Sato, Shuji Higashi;** *-Sankosha Corporation, Kanagawa, Japan*	233
WE-PM-E1: TM-1-E- Topical Meeting on Lightning Protection: Lightning Electromagnetic Pulses, Lightning Characteristics and Modeling Chairs: **Prof. Akihiro Ametani, Prof. Marek Loboda**		
1:20pm -1:45pm	WE-PM-E1-1 **Lightning attractive radii of vertical and horizontal conductors evaluated using a self consistent leader inception and propagation model - SLIM (Invited)** **Vernon Cooray; -***Uppsala University, Uppsala, Sweden*	544
1:45pm -2:00pm	WE-PM-E1-2 **Electrical structure of the Lightning-Channel Corona Sheath** **Grzegorz Maslowski;** *-Rzeszow University of Technology, Rzeszów, Poland*; **Vladimir A. Rakov; -** *University of Florida, Gainesville, FL, USA*; **Megumu Miki; -***Central Research Institute of Electric Power Industry, Tokyo, Japan*	103
2:00pm -2:15pm	WE-PM-E1-3 **Formulation of the Fractal Lightning Channel Model and the Characteristics of the Corresponding Electromagnetic Fields Radiation** **Q. L. Zhang, J. W. Feng, X. Y. Geng**; *- Key Laboratory of Meteorological Disaster of Ministry of Education, Nanjing, China; Nanjing University of Information Science and Technology, Nanjing, China*	62

2:15pm -2:30pm	WE-PM-E1-4 **The characteristics of Cloud-to-Ground Lightning Flash with Different Contacts** **X. Z. Kong, Y. Zhao, G. S. Zhang and T. Zhang; -***Cold and Arid Regions Environmental and Engineering Research Institute, Lanzhou, Gansu, China*; **X. S. Qie; -***Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China*	465
2:30pm -2:45pm	WE-PM-E1-5 **A Statistical View for Fractal Simulation of Lightning** **Lin Dong, Jinliang He, Rong Zeng; -***Tsinghua University, Beijing, China*	497
2:45pm -3:00pm	WE-PM-E1-6 **Fine Structure of Electric Field Waveforms Recorded at Near and Far Away From the Lightning Channel** **Amitabh Nag, Dimitris Tsalikis, Vladimir A. Rakov, Joseph Howard, Christopher J. Biagi, Dustin Hill, Martin A. Uman, Douglas M. Jordan; -***University of Florida, Gainesville, USA*	460
3:00pm -3:15pm	WE-PM-E1-7 **A Case Study of the Temporal Context of Narrow Bipolar Eventswith Ordinary Lightning** **Fanchao Lv, Baoyou Zhu, Dong Ma, Ming Ma; -***University of Science and Technology of China, Hefei, China*	203
WE-PM-E2: TM-1-F- Topical Meeting on Lightning Protection: Lightning Protective Devices and Grounding Chairs: **Prof. Stanislaw Grzybowski, Prof. Rajeev Thottappillil**		
3:40pm -4:05pm	WE-PM-E2-1 **Essential Requirements for Earthing System Determining the Efficiency of Lightning Protection (Invited)** **Marek Loboda; -***Warsaw university of Technology, Warsaw, Poland;* **Robert Marciniak;** *-Galmar, Poznan, Poland*	542
4:05pm -4:20pm	WE-PM-E2-2 **Discussion of Measurement of Surge Impedance of a Horizontal Grounding Conductor using Approximate Expression** **Shozo Sekioka; -***Shonan Institute of Technology, Fujisawa, Japan*	490
4:20pm -4:35pm	WE-PM-E2-3 **Lightning Protection of Overhead Lines Rated at 3-35 kV and Above with the Help of Multi-Chamber Arresters and Insulator-Arresters** **G.V. Podporkin, E. Yu. Enkin, E. S. Kalakutsky, V. E. Pilshikov and A. D. Sivaev; -***Streamer Electric Company, St. Petersburg, Russia*	87
4:35pm -4:50pm	WE-PM-E2-4 **A Study on the Fuse and its Requirements for Class Ⅱ SPD Disconnectors** **Atsushi Sato, Nobuyuki Morii, HIdetaka Sato; -***NTT Facilities, Tokyo, Japan*	105
4:50pm -5:05pm	WE-PM-E2-5 **Statistical Investigation of Influence of Surge Arresters on Lightning Surge Level in 220 V AC Power Systems** **Shunchao Wang, Shuiming Chen, Jun Hu; -***Tsinghua University, Beijing, China*; **Xuemei Deng; -** *Schneider Electric (China) Investment Co.Ltd, Shanghai, China*	525
5:05pm -5:20pm	WE-PM-E2-6 **A New Lightning Protection System for Vehicles** **Guohua Yang, Xueying Wang, Tongshu Liu, Cheng Zhu, Deyan Wang**;*- Sichuan Zhongguang Hi-Tech Industrial Development Group, Chengdu, Sichuan, P.R.China*	571
5:20pm -5:35pm	WE-PM-E2-7 **Experimental Study on Coordination between SPD in Panel-board and SPD-Component of an Electric Household Appliance** **Yasuhiro Miyama, Shunichi Yanagawa, Takashi Sawamura; -***Shoden Coorpration, Chiba, Japan*; **Yoshinosuke Arai; -***SD protection research laboratory, Tokyo, Japan*	381
5:35pm -5:50pm	WE-PM-E2-8 **Lightning Surge Response Characteristics of SPDs used Protecting an Electronic Apparatus** **Shunichi- Yanagawa, Yasuhiro Miyama, Takashi Sawamura, Akio Omi; -***Shoden corporation, Chiba, Japan*; **Kazuo Yamamoto; -***Kobe City College of Technology, Kobe, Hyogo, Japan*	384

Thursday, 15 April 2010 Room 307

TH-PM-E1: TM-1-G- Topical Meeting on Lightning Protection: Devices for Measuring Lightning-caused Voltages and Currents and Triggered Lightning Experiments
Chairs: **Prof. Yoshihiro Baba, Prof. Visacro Silvério**

1:20pm -1:45pm	TH-PM-E1-1 **Develpopment of Lightning Observation Methods for Current Waveforms and Discharge Progressing Manner (Invited)** **Shigeru Yokoyama; -***CRIEPI, Japan*	376
1:45pm -2:10pm	TH-PM-E1-2 **Sensors for In-Flight Lightning Current Measurement on Aircrafts (Invited)** **A.P.J. van Deursen, V. Stelmashuk; -***Eindhoven University of Technology, Eindhoven, Netherlands*; **V. Stelmashuk; -***Institute for Plasma Physics, Prague, Czech Republic*	260
2:10pm -2:25pm	TH-PM-E1-3 **Sensor System for Blade Lightning Strikes** **Yoshiharu Asada, Hitoshi Furusawa; -***Sankosha Corporation, Kanagawa, Japan*; **KiyohiroWatanabe, Yasuhiko Kato; -***NIPPO Corporation, Tokyo, Japan*	166
2:25pm -2:30pm	TH-PM-E1-4 **Return Stroke Current during Shandong Artificially Triggered Lightning from 2005-2009** **Xiushu Qie; Jing Yang; Rubin Jiang; Yang Zhao; Guangshu Zhang; Guili Feng; QIlin Zhang; -***LAGEO, Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, Japan*; **Yang Zhao, Guangshu Zhang; -***Cold and Arid Regions Environmental and Engineering Research Institute, Lanzhou, China*; **Guili Feng; -***Shandong Research Institute of Meteorology, Jinan, China*; **Qilin Zhang; -***Nanjing University of Information Science and Technology, Nanjing, China*	57
2:30pm -2:45pm	TH-PM-E1-5 **An Analysis on the Characteristics of Induced Overvoltage Caused on the AWS Signal Line by Artificially Triggered Lightning** **Zhihui Huang, Xiaobo Wang, Shaodong Chen, Liwan Zhang, Ruiwen Xu; -***Lightning Protection Center of Guangdong Province, Guangzhou, China*	324
2:45pm -3:00pm	TH-PM-E1-6 **The Characteristics of M-Component and Continuing Current from Triggered-lightning in Shandong** **Caixia Wang, Xiushu Qie, Jing Yang, Rubin Jiang, Qilin Zhang, Junfang Wang, Meirong Yang, Dongxia Liu, Lunxiang Pian; -***Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China*; **Caixia Wang, Hong Yang; -***Beijing Information Science and Technology University, Beijing, China*	156
3:00pm -3:15pm	TH-PM-E1-7 **Observation of Ground Potential Rise Caused by Artificially-Triggered Lightning** **Jing Yang, Xiu-Shu Qie; -***Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, P. R. China*; **Jian-Guo Wang; -***Wuhan University, Wuhan, P.R. China*; **Zhao Yang, Zhang Qi-Lin, Yuan Tie, Zhou Yun-Jun, Feng Gui-Li; -***Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, Lanzhou, P.R. China*	283

TH-PM-E2: TM-1-H- Topical Meeting on Lightning Protection: Lightning Protection of Power Systems
Chairs: **Prof. Carlo Alberto Nucci, Prof. Rong Zeng**

3:40pm -4:05pm	TH-PM-E2-1 **Laboratory Investigation of Lightning Striking Distance to Rod and Transmission Line (Invited)** **Stanislaw Grzybowski, Thongchai Disyadej; -***Mississippi State University, USA*	351
4:05pm -4:30pm	TH-PM-E2-2 **The Mechanism Study of Jet Stream Interrupter Gap Lightning Protection Device (Invited)** **Jufeng Wang, Zhidu Huang, Zhouping Chen, Jie Tang, Yanlei Wang;** *-Guangxi University, Guang xi, China*	528

4:30pm -4:45pm	TH-PM-E2-3 **Modeling of Corona Discharge on a Transmission Line Conductor Struck by Lightning for FDTD Calculations** **Tran Huu Thang, Yoshihiro Baba, Naoto Nagaoka, Akihiro Ametani; -***Doshisha University, Kyoto, Japan*; **Jun Takami, Shigemitsu Okabe; -***Tokyo Electric Power Company, Kanagawa, Japan*; **Vladimir A. Rakov; -***University of Florida, Gainesville, USA*	250
4:45pm -5:00pm	TH-PM-E2-4 **Fundamental Experiments on Surge Characteristics of Submarine Cables Connected with Offshore Wind Farms** **K. Yamabuki, K. Kubori; -***Wakayama National College of Technology, Gobo, Wakayama, Japan*	386
5:00pm -5:15pm	TH-PM-E2-5 **FDTD Calculation of Lightning-Induced Voltages on an Overhead Two-Wire Distribution Line** **Toshiki Takeshima; Vladimir Rakov; Naoto Nagaoka; Akihiro Ametani; -***Doshisha University, Kyoto, Japan*; **Jun Takami, Shigemitsu Okabe; -***Tokyo Electric Power Company, Kanagawa, Japan*; **Vladimir A. Rakov; -***University of Florida, Gainesville, FL, USA*	102
5:15pm -5:30pm	TH-PM-E2-6 **Experimental Study on Short Circuit Phenomena in Air Switch of Distribution Line Due to Lightning Overvoltage on Which One Surge Arrester of the Three Ones is Omitted** **Tomoyuki Sato, Satoshi Uemura, Akira Asakawa, Shigeru Yokoyama; -***Central Research Institute of Electric Power Industry, Nagasaka, Yokosuka-shi, Japan*; **Hideki Honda, Kazuhiro Horikoshi; -***Tohoku Electric Power Co., Inc, Honcho, Aoba-ku, Sendai-shi, Japan*	179
5:30pm -5:45pm	TH-PM-E2-7 **Research on Characteristics of Conductor Surface Electric Field Considering Downward Lightning Leader** **Zhizhao Li, Rong Zeng, Yong Zhang, Zhanqing Yu**; *-Tsinghua University, Beijing, China;* **Zhiyong Wang**; *-China Southern Grid Company, Guangzhou, China*	538

Open Forum- Sessions

Open Forum-1:
Best Student Paper Prize Competition

Tuesday, 13 April 2010 1:20pm to 4:20pm

Chairs: Prof. Erping Li

Level 3 Concourse

TU-OF-1-1	**FDTD Calculation of Lightning-Induced Voltages on an Overhead Two-Wire Distribution Line** **Toshiki Takeshima; Vladimir Rakov; Naoto Nagaoka; Akihiro Ametani; Jun Takami; Shigemitsu Okabe; -***Doshisha University, Kyoto, Japan*; **Jun Takami, Shigemitsu Okabe; -***Tokyo Electric Power Company, Kanagawa, Japan*; **Vladimir A. Rakov; -***University of Florida, Gainesville, FL, USA*	102
TU-OF-1-2	**Investigation and Experimental Verification of Various Power Distribution Network Cases Through DLL Clock Jitter Affected by SSN** **Minchul Shin, Jongjoo Shim, Yujeong Shim, Joungho Kim**; *-KAIST, Daejeon, KOREA*	394
TU-OF-1-3	**Common-Mode Interference Suppressor for Chopper Circuit based on Negative Capacitance-Applications and Improvements** **Anqi Hu, Weiming Ma, Jin Meng, Zhihua Zhao**, *Naval University of Engineering Wuhan 430033, Hubei Province, China*	445
TU-OF-1-4	TH-PM-D1-2 **Electromagnetic Shielding Analysis of Printed Flexible Meshed Screens** **L. B. Wang, K. Y. See**; *-Nanyang Technological University, Singapor*； **W. Y. Chang**;*-DSO National Laboratorie*; **C. W. Lu, S. T. Ng**; *-Singapore Institute of Manufacturing Technology, Singapore*	213
TU-OF-1-5	**Parallel High-Order FE-BI-MLFMA for Scattering by Cavities Loaded with Complex Obstacles** **Minglin Yang**，**Xin-Qing Sheng**; *-Beijing Institute of Technology, Beijing, China*	134
TU-OF-1-6	**In Vitro Protocol to Study the Electromagnetic Interaction of RFIDs and Infusion Pumps** **Nickolas LaSorte; Ifeatu Akunne; Hazem Refail**; *-University of Oklahoma, Tulsa, Oklahoma, USA*	126
TU-OF-1-7	**Fast EMI Analysis of Massively Coupled Interconnects with Long Delay** **Ashok Narayanan; Ram Achar; Natalie Nakhla; Michel Nakhla**; *-Carleton University, Ottawa, Ontario, Canada*	31
TU-OF-1-8	**Study of Susceptibility of an MCU Control System in the Automotive Field** **Fayu WAN; Fabrice DUVAL; Savatier Xavier; Anne Louis; Mazari Belahcene**; *-Avenue Galilée, Saint Etienne du Rouvray, France*	97
TU-OF-1-9	**Interaction Between a Six-layered Spherical Head Model and a Half-wave Diploe Antenna** **Hamid Khodabakhshi, Ahmad Cheldavi**; *-Iran University of Science and Technology, Narmak, Tehran, Iran*	333
TU-OF-1-10	**Metamaterial Entrenched Circular Microstrip Antenna for Malaysia HAPS** **A.A.M Ezanuddin, M.F Malek, P.J Soh; -***University Malaysia Perlis (UniMAP), Perlis, Malaysia*	181

Open Forum-2:
Microwave, Communication and Antenna

Wednesday, 14 April 2010 10:20am to 12:20pm

Chairs: **Prof Rajashree Narendra, Prof Dr Xinyu Hou**

Level 3 Concourse

	Nan He, Jianhua Ji, Yuanchun Fei; -*Beijing Institute of Technology, Beijing, China*	
WE-OF-2-17	**Modeling and Design of a Wideband Marchand Balun** **Leijun Xu, Zhigong Wang, Qin Li, Jun Xia; -***Southeast University, Nanjing, Jiangsu, China;* **Leijun Xu; -***Jiangsu University, Zhenjiang, Jiangsu, China*	411
WE-OF-2-18	**Co-design of Dual-band Low Noise Amplifier and Band-pass Filter** **Runbo Ma, Wenmei Zhang; -***Shanxi University, Shanxi, China*	416
WE-OF-2-19	**Analysis of Dispersion Characteristic of Substrate Integrated Waveguide based on Mode Matching Method** **H.R.Sadreazami, E.Mehrshahi, R.Rezaiesarlak; -***Shahid Beheshti University, Tehran, Iran*	434
WE-OF-2-20	**Analytical Calculation of the Specific Absorption Rate from Cellular Phone in some Realistic Situations** **Adnen Rajhi; -***Technological & computer science higher education School, 7thNovember University, Tunisia;* **Ali Gharsallah; -***High frequencies electronic circuits & systems research laboratory, Faculty of Sciences of Tunis, EL-Manar University, Tunisia;* **Abdelhafidh Gharbi;-** *Physics Research Laboratory, Faculty of Sciences of Tunis, EL-Manar University, Tunisia*	171
WE-OF-2-21	**Waveguide to Microstrip Probe Transition for Millimetre Wave Applications Using LTCC Technology** **Peng WU, Shi Chun SUN, Zhi Gang WANG, Yong ZHANG; -***University of Electronic Science and Technology of China, Chengdu, China*	388
WE-OF-2-22	**Influence of Localized Defect on Transmission in a Coaxial Bragg Structure** **Xue-Yong Ding, Ling-Ling Wang; -***Sanya college of hainan university, Hainan, China*	141
WE-OF-2-23	**Influence of Different Gains to Adaptive Interference Cancellation System** **Yunhao Jiang; -***Huazhong University of Science and Technology, Wuhan, China;* **Zhihua Zhao, Anqi Hu, Wenlu Li, Huan Xiao, Jian Tang; -***Naval University of Engineering, Wuhan, China*	328
WE-OF-2-24	**Differential Equations of Mixed-systems Modeling and Simulation Based on VHDL-AMS** **Dongsheng Yang, Qi Wang; -***The First Aeronautical Institute of Air Force, Xinyang, Henan, China*	448

Open Forum-3:
System-level EMC and Computational Electromagnetics

Wednesday, 14 April 2010 1:20pm to 3:20pm

Chairs: **Prof. Sungtek Kahng, Prof. Donglin Su**

Level 3 Concourse

WE-OF-3-1	**Switching Transients and their EMI in Secondary Systems in ±800-kV UHVDC Converter Stations** **Zhanqing Yu, Rong Zeng, Jinliang He, Bo Zhang, Shuiming Chen**; *-Tsinghua University, Beijing, China*; **Hong Rao, Xiaolin Li, Qi Wang**; *-China Southern Power Grid Co. Ltd, Guangdong, China*	10
WE-OF-3-2	**Power Electronics Devices Modeling by Traditional Equivalent Circuit and Black-box Theory** **Haifeng Sun; Xiang Cui; Lei Qi**; *-North China Electric Power University, Beijing, China*	112
WE-OF-3-3	**Radiated EMI Estimation for Power Line Communication based on Conducted Noise Separation Network** **Yang Zhao; Yinghua Dong; Xiaoquan Lu; Ningqiu Jiang**; *-Nanjing Normal University, Nanjing, China;* **Yang Zhao**; *-Southeast University, Nanjing, China*	123
WE-OF-3-4	**Prediction of the Conducted Interference Generated by a Static Var Compensator within a Steel Plant** **Qingmin Li; Li Zhang; Jinxin Huang; Wei Wang;** *-Shandong University, Shandong, China*; **W. H. Siew**; *-University of Strathclyde, Scotland, United Kingdom*	127
WE-OF-3-5	**Electromagnetic Environment of 1000kV UHV AC Substation** **Baoquan Wan, Huichun Xie, Guangzhou Zhang, Xiaowu Zhang**; *-State Grid Electric Power Research Institute, Beijing, China*	153
WE-OF-3-6	**Simulation of Electromagnetic Interference Coupling to a Substation Secondary Cable** **Hui Dou, Zhenguang Liang**; *-Shandong University, Jinan, China*	315

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Thursday, 15 April 2010 10:20am to 12:20pm

Chairs: **Prof. Xiushu Qie, Dr. Grzegorz Maslowski**

Level 3 Concourse

Lightning Physics and Protection-B

Thursday, 15 April 2010 10:20am to 12:20pm

Chairs: **Prof. Mingli Chen, Prof. Zhengcai Fu**

Level 3 Concourse

TH-OF-4-28	**The Analysis of Grounding System under Lightning Surge Currents** **Jingli Li, Tao Yuan, Wenxia Sima, Cai-xin Sun**; *-Chongqing University, Chongqing, China*	518
TH-OF-4-29	**Lightning Shielding Protection Design and Actualization of 1000-kV UHVAC Overhead Transmission Line in China** **Jun Yuan**; *-State Grid Corporation of China, Beijing, China*; **Zhanqing Yu**; *-Tsinghua University, Beijing, China*	536
TH-OF-4-30	**Analysing on Characteristics of Lightning Shielding Failure of UHVAC Double Circuit Transmission Line based on Leader Progression Method** **Zhiyong Wang**;*- China southern power grid co.,LTD,Guangzhou,China*;**Shaoan Wang, Zhanqing Yu,Yinan Geng, Rong Zeng, Jinliang He,Zhizhao Li**; *-Tsinghua University, Beijing, China*	537
TH-OF-4-31	**The Atmospheric Electric Field Monitoring in Beijing Zhongguancun Zone** **Shiqiang Yu, Xiujie Jiang, Cheng Liu, Huawei Zhang, Fushan Luo**; *-Chinese Academy of Sciences, Bejing, China*	224

Open Forum-5:
Electromagnetic Measurement, EME and Bio- Electromagnetics

Thursday, 15 April 2010 1:20pm to 3:20pm

Chairs: **Prof Qingmin LI, Dr John Norgard**

Level 3 Concourse

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TH-OF-5-2	**Mathematical Analysis for the Electrical Performance Study of Rtv Silane Epoxy Resins In Tropical Climate** **Hamzah Berahim, T.Haryono**; *-Gadjah Mada University, Yogyakarta, Indonesia*	533
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TH-OF-5-4	**Blind Signal Separation (BSS) Algorithm Applied in EMI Noise Diagnosis** **Xiaohui Qiu**; *-Nanjing Post and Telecommunication University, Nanjing, China*; **Xiaohui Qui, Hao Chen**; *-China Univ. of Mining Technology, Xuzhou, China*; **Xiaohui Qui**; *-Southeast University, Nanjing, China*; **Yang Zhao, Xiaoquan Lu, Yinghua Dong, Wei Yan**; *-Nanjing Normal University, Nanjing, China*	96
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TH-OF-5-6	**Frequency Spectrum Analysis Method for Short-time and Frequency Conversion Signals based on Simulation EMI Receiver** **Xiangming Zhang, Zhihua Zhao**; *-Naval University of Engineering, Wuhan, Hubei Province, China*; **Fei Guo, Jin Meng, Wenlu Li, Anqi Hu**; *-National Key Laboratory for Vessel Integrated Power System Technology, Wuhan, Hubei Province, China*	373
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TH-OF-5-9	**The Fabrication and Application of CM/DM Interference Separation Network based on Transmission-line Transformer** **Lei Zhang, Jin Meng, WeiMing Ma**; *-Naval University of Engineering, Wuhan, Hubei, China*	405
TH-OF-5-10	**On the Shielding Effectiveness Measurements of Building Materials at Radio Communication Frequencies in Reverberation Chambers** **Weibing Fan**; *-Beijing Special Engineering Design and Research Institute, Bejing, China*; **Weibing Fan ,Mark Panitz, Steve Greedy, Xavier Ngu, Christos Christopoulos**; *-University of Nottingham, Nottingham, United Kingdom*	200

Exhibitors or Others

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Tel: +1 484 688 0300, extension 13, +86-10-51695598 ext 886

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