Contents

Welcome Letter

Dear Colleagues and Friends,

We welcome all of you to attend ASIA Electromagnetics Conference (ASIAEM 2015) in Jeju, Korea.

In recent years, the research activities in Asia are flourishing, especially in countries like China, Korea and India, etc. Therefore, for the first time, we organize Asia Electromagnetics Conference and we are now here to hold the ASIAEM conference.

ASIAEM 2015 continues the tradition of the AMEREM/EUROEM, focuses on High Power Electromagnetics and the related fields. Starting from 2015, the meetings will be called the AMEREM/EUROEM/ASIAEM conference, and the ASIAEM will be held in every odd year.

Because of many research results in electromagnetic transients obtained from China's EHV/UHV engineering project which is of the largest scale in the world, the ASIAEM adds a new technical committee to the existing 12 committees. Moreover, ASIAEM sets up three awards, namely, young scientist award, best paper award and best student paper award to encourage researchers, young scientists and students in the community of HPEM.

We hope ASIAEM 2015 will serve as a platform for experts and researchers from all around the world to share achievements, exchange findings and results, present progress and discuss new ideas and challenges in the field of High Power Electromagnetics.

We have undergone a quite long journey in the organization of ASIAEM 2015 and we are happy to have been working so closely with our colleagues. Firstly, we wish to express our deepest gratitude to all committee members including the Technical Program Committee, chaired by Dr. Dave Giri, the Financial Committee, chaired by Dr. Jin Soo Choi, and the Award Committee, chaired by Prof. Felix Vega. In addition to the two organizers, Xi'an Jiaotong University, China and KIEEME, Korea, we also highly appreciate the great support from the co-organizers, Chairs of TCs and SSs, reviewers, sponsors, exhibitors and Summa Foundation. Meanwhile, many institutions have also contributed a lot to make this conference a success.

We do deeply believe that you will find it a technically fruitful trip and enjoy a nice working vacation in Jeju.

Yan-zhao XIE
General Chair of the ASIAEM 2015
Professor, Xi'an Jiaotong University, China

Chang-Su Huh
General Co-chair of the ASIAEM 2015
Professor, Inha University, Korea

Welcome Letter from the TPC

Dear Members of the HPEM Community,

On behalf of the Technical Program Committee (TPC), it is a pleasure to welcome you to the first ever ASIAEM 2015 in this wonderful "Hawaii of Asia" island of Jeju in Republic of Korea!

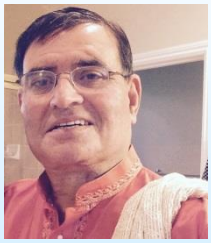
We have planned an exciting technical program consisting of both oral and poster presentations. In addition, we have exhibitors presenting their products and services. HPEM (High-Power Electromagnetics) is an all-encompassing term consisting of lightning, HEMP, IEMI and electromagnetic systems producing high–power EM fields in narrowband, mesoband, sub-hyperband and hyperband. To cover this vast technical area, we formed 13 Technical Committees (TCs) in HPEM, UWB, UXO and a Poster Session (note that while UWB and UXO EM fields are part of HPEM, we have separate TCs for historical reasons). This time around, the seven Special Session (SS) organizers deserve a debt of gratitude for assembling high-quality presentations in diverse areas. Each of these TCs and SSs has a Chair and Co-Chair soliciting submissions and organizing sessions. We are grateful to each one of them. We received 187 abstract submissions from 17 countries. A new feature was that the submissions could be up to 3 pages long. Authors from Asian nations, especially the host nations of China and Republic of Korea have contributed significantly. The quantity and the quality of submissions is indeed impressive considering the number of symposia in related areas this year and that we are organizing ASIAEM for the first time. This success has been possible because of the efforts of the Chairs and Co-Chairs of TCs and SSs.

It was no easy task to cycle through the review process and organize the papers into coherent technical sessions. The on-line review process worked well, and we are thankful to all of the reviewers. The TPC, the Symposium Chairs and the Organizing Committee worked well together to serve up an exciting technical program. We have introduced both a Young Scientist/Engineer award and the Best Student Paper award this time. These recognitions will take place during the Banquet on Wednesday, August 5, 2015. We also plan to collect some selected papers from AMEREM 2014, ASIAEM 2015 and the upcoming EUROEM 2016 to publish as UWB SP 11.

We do hope you will find this to be a rewarding and useful program. Please do plan to take some time out to enjoy the Korean cuisine and the many other visitor offerings, which include a wide range of activities such as: hiking on Halla-san (South Korea's highest peak), catching sunrises and sunsets over the ocean, viewing majestic waterfalls, riding horses, and relaxing on the sandy beaches.

Then you should begin to think about EUROEM 2016 in London!

Dr. D. V. Giri
Chair, TPC & V P, SUMMA



Dr. William Radasky
Co-Chair, TPC

Dr. Lihua Shi
Co-Chair, TPC

List of Committees

Conference General Chair	**Prof. Yanzhao Xie**	Xi'an Jiaotong University, China
Conference General Co-Chair	**Prof. Chang Su Huh**	Inha University, Republic of Korea
Technical Program Committee Chair	**Dr. Dave Giri**	Pro-Tech, U.S.A.
Technical Program Committee Co-Chair	**Dr. William Radasky**	Metatech, U.S.A.
Technical Program Committee Co-Chair	**Prof. Lihua Shi**	Key Lab. on E3OE, China
Financial Committee Chair	**Dr. Jin Soo Choi**	ADD, Republic of Korea
Award Committee Chair	**Prof. Felix Vega**	National University of Colombia, Colombia
Award Committee Co-Chair	**Prof. Xinjie Yu**	Tsinghua University, China
Exhibition Committee Chair	**Dr. Woo-chul Park**	KTR, Republic of Korea
Conference Advisor	**Prof. Edl Schamiloglu**	University of New Mexico, U.S.A.
Conference General Secretary	**Dr. Liqiong Sun**	Xi'an Jiaotong University, China
Conference Secretary	**Dr. Seungmoon Han**	Inha University, Republic of Korea

List of Technical Committees and Special Sessions

Technical Committee	Description	Chair Co-Chairs
TC1	Sources, Antennas and Facilities (both wideband and narrowband)	**Dave Giri** **Bill Prather** **Baoliang Qian**
TC2	Applications of Coupling to Structures and Cables	**Mats Bäckström** **Lars-Ole Fichte** **Hongge Ma**
TC3	Measurement Techniques	**Frank Sabath** **Anthony Wraight** **Lihua Shi**
TC4	IEMI Threats, Effects and Protection	**William Radasky** **Richard Hoad** **Jong-Gwan Yook**

TC5	System-level Protection and Testing	**Armin Kaelin** **Tae-Heon Jang** **Yanzhao Xie**
TC6	Lightning EM Effects	**Farhad Rachidi** **Marcos Rubinstein** **Jinliang He**
TC7	Numerical Models and Modeling	**Jean-Philippe Parmantier** **Sergey Tkachenko** **Shengquan Zheng**
TC8	Bio-effects and Medical Application of EM Fields	**Lars-Ole Fichte** **Guozhen Guo**
TC9	Antenna Design, Radiation and Propagation	**Dave Giri** **Everett Farr** **Young-Joong Yoon**
TC10	Radar Systems (Signal Processing and Security) Aspects	**Lin Ma** **Guisheng Liao**
TC11	Target Detection, Discrimination and Imaging	**Vladimir Koshelev** **Anxue Zhang**
TC12	Landmine and IED Detection	**Jürgen Sachs** **Felix Vega**
TC13	Electromagnetic transients in UHV/EHV transmission lines and substations	**Xiong Wu** **Yanzhao Xie** **William Radasky**

Technical Committee	Description	Chair Co-Chairs
SS1	Design of Protective Devices and Test Methods	**Tae-Heon Jang** **Chang-su Huh**
SS2	Evaluation of HEMP/IEMI Impacts on Critical Infrastructure	**William Radasky** **Richard Hoad**
SS3	Explosive Devices Effects and Protection for HPEM	**Jupeng Liu** **Felix Vega**
SS4	Statistical Methods in HPEM	**Chaouki Kasmi** **Lars-Ole Fichte**
SS5	HPEM Standards	**Richard Hoad** **William Radasky**
SS6	The Vulnerability of Aircraft to Electromagnetic Threats	**Jianshu Luo** **Guyan Ni**
SS7	Pulse Power Supply for Electromagnetic Launch	**Xinjie Yu** **Xueling Yao**

General Information of Conference Venue

Conference Venue: As the heart of the International Conference located in Jungmun Tourist Complex-one of the representative tourist resort complexes in the Republic of Korea, the ICC is nation's only resort-style convention center. It has been awarded Earchcheck's silver certification status for its high-level of environmental performance and good facilities.

The Location of the ICC:

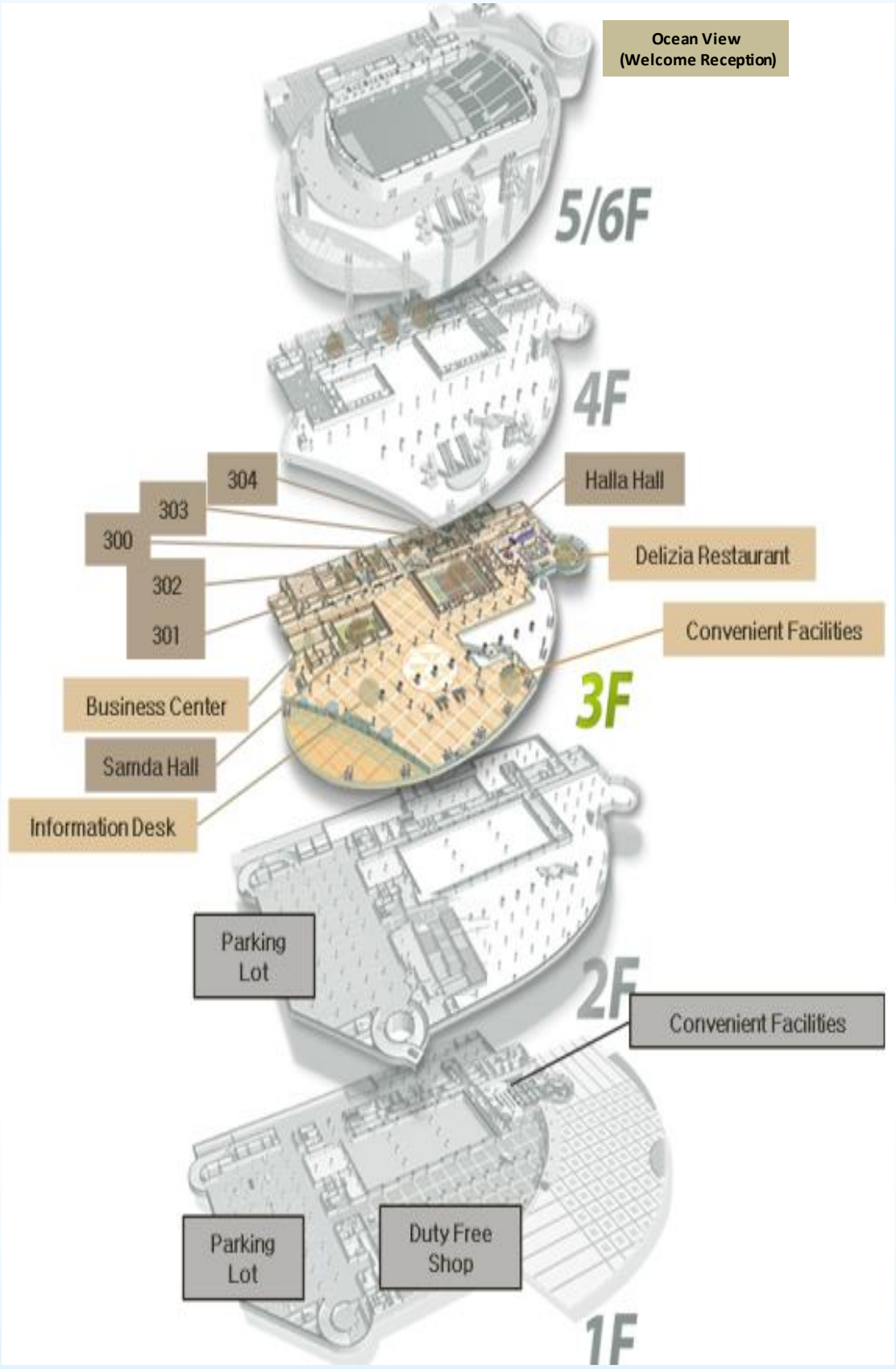
ACCESS

- **Public**
  - Bus no. 600
  - Fee is KRW 4,500 (Airport → ICC)
  - Bus No. 600 can take you from Hana / Suites / Hayatt Hotel to the ICC.

- **Taxi**
  - about 40~45 minutes
  - Fee is about KRW 35,000 (Airport → ICC)

- **Driving**
  - Many car rent companies are available
  - Contact with information desk of airport

Conference Rooms:

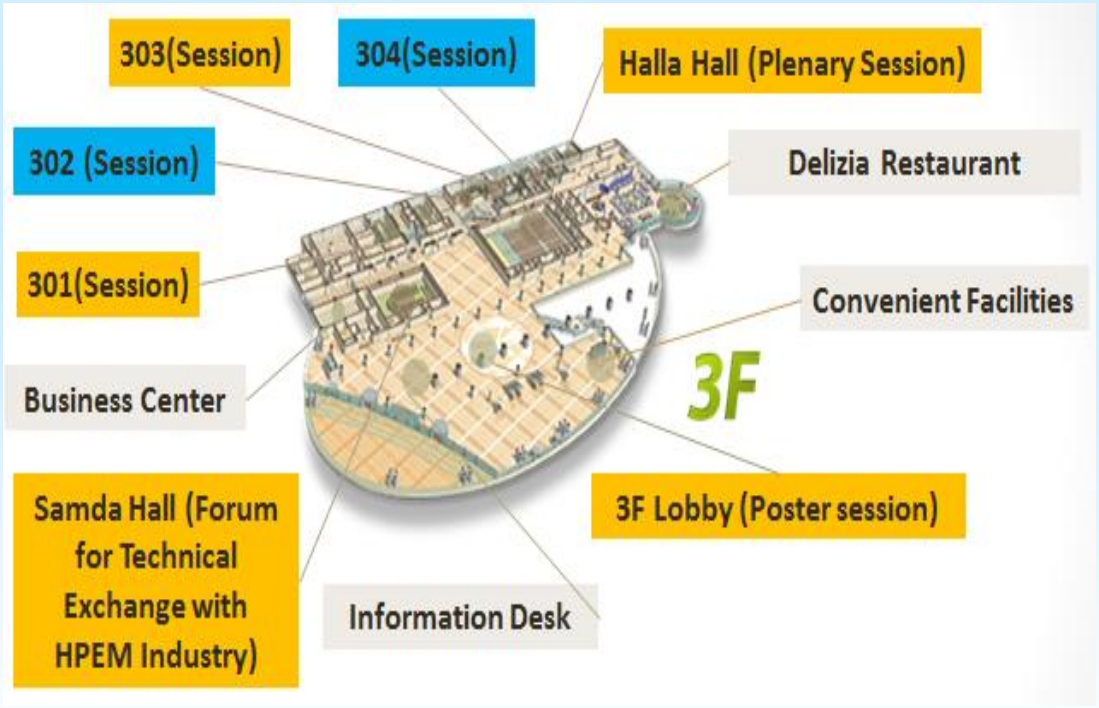


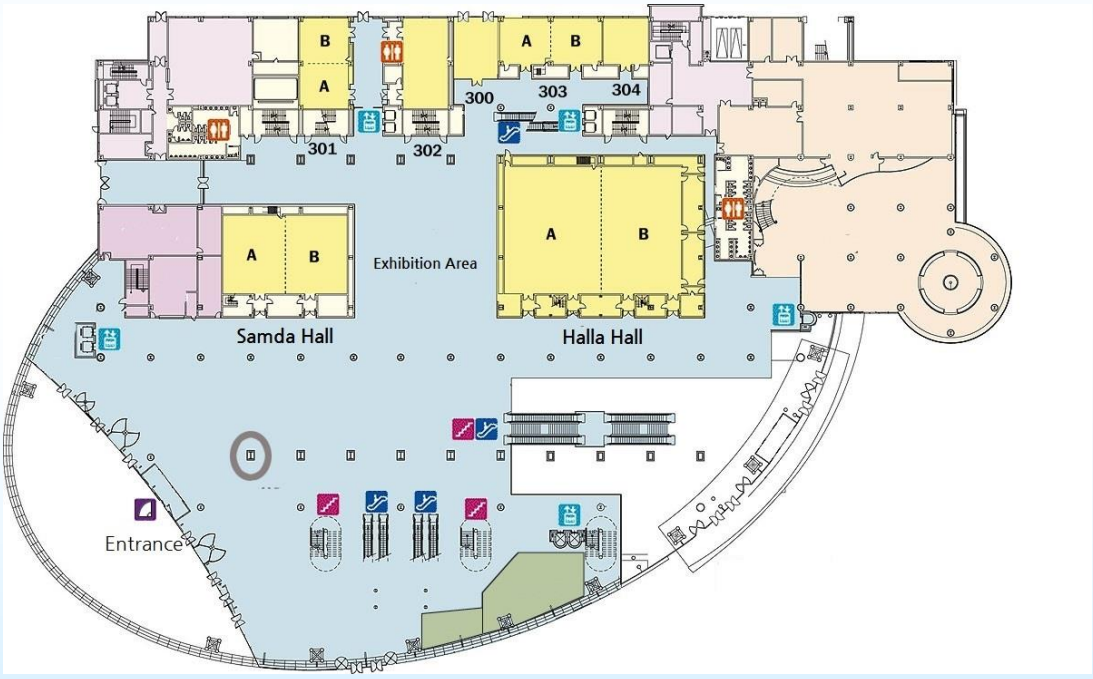
Website and Internet Free Zone

Conference website: www.asiaem.org; asiaem2015.xjtu.edu.cn

The internet free zone is 3F lobby and the exhibition booth area. There will be 100 connections in the internet free zone at the same time. The Wifi-Free ID is **asiaem2015** and the Password is **asiaem11.**

The Layout of the 3rd Floor:





Social Events

Welcome Reception – (18:00-20:00) Sunday August 2nd, 2015

The Welcome Reception will be held in "Ocean View" hall on the 5th floor of Jeju ICC building during 18:00-20:00 on Sunday. The Welcome Reception (dinner included) is for all the participants of ASIAEM 2015.

Awards Banquet – Wednesday August 5th, 2015

The Awards Banquet will be held in the Garden of Hyatt Hotel on Wednesday. The Awards Banquet is for all the participants with a ticket of $75. Banquet time is 6 PM ~ 8 PM, and the shuttle bus will be prepared at the ICC. The departure time of the shuttle bus from ICC is 17:10, 17:30 and 17:50, respectively.

HPEM Committee Meeting – Thursday August 6th, 2015

The HPEM Committee Meeting will be held in a Korean restaurant "Dumjang" which is near ICC (4 km) on Thursday. The shuttle bus will be provided from ICC to the restaurant at 6:30 PM. The HPEM Committee Meeting is **only** for those who were invited.

Guidelines

Guidelines for Registration and Hotel Reservation

The registration website is http://www.asiaem.net/asiaem2015/index.php. Please proceed with the registration procedure as soon as possible. You can pay the registration fee online with credit card or bank-wire transfer. Registration doesn't include the banquet ticket. If you forget to tick for the banquet when you register, you can buy the banquet ticket on the conference site at the day.

Cancellation policy for registration:
Notice of cancellation must be received in writing via email sent to holyjoyhan@gmail.com and asiaem2015@mail.xjtu.edu.cn no later than Monday, July 15th, 2015. A 100 USD processing fee will be charged for registrations cancelled prior to 15th July 2015. For cancellations after 15th July 2015, no refunds will be possible.

The Hana Hotel, the Hyatt Hotel, the Suites Hotel and the ASIAEM2015 Organizing Committee have reached the following agreement on accommodation discount for those who will participate in the ASIAEM2015 Electromagnetic Conference cooperation. If you want to book one of these three hotels, please find the hotel registration form on http://asiaem2015.xjtu.edu.cn/accommodation/10.html, fill it and send it back to the given email address quickly.

Contact persons:
Prof. Chang Su Huh: cshuh@inha.ac.kr
Dr. Jin Soo Choi: jschoi308@naver.com
Dr. Seungmoon Han:holyjoyhan@gmail.com

Guidelines for Session Chairs and Co-Chairs

Please arrive at least 10 minutes before the start of your session. Gather some brief information about the presenters to introduce them to the delegates. Name and affiliation is sufficient in most cases. Familiarize yourself with the presentation topics

or abstracts before the session.

There will be a laptop computer and the usual audio/video equipment in each of the meeting rooms with a technical assistant to help the presenters. Make sure all the presentations are loaded up in the laptop prior to the start of the session.

If both the Chair and Co-Chair are present, they can share the responsibility. If only the Chair or Co-Chair is present, he/she becomes responsible to conduct the entire session. The 20 minute time allotted to each paper should be strictly followed. You can give the presenters a 5 and 2 minute warning. Instruct the presenters to wrap up and allow a question/comment from the audience for at least a couple of minutes within the 20 minute window. Manage audience contributions, questions and answers. Make sure that the session promotes dialogue, as well as respectful and productive interaction.

The form with the information of the papers and whether the speakers presents or not will be provided in each room before each session starts. If there is a no-show, please leave the gap and do not start the next paper in the wrong time slot. Please follow the time schedule of the Technical Sessions strictly.

Contact persons:
Dr. Dave Giri: Giri@DVGiri.com
Dr. William Radasky: wradasky@aol.com
Prof. Lihua Shi: lh_shi@126.com

Guidelines for Oral Presentation Presenters

Please bring your presentations as a PDF file on USB Flash Memory if you do not have any video clips, with all fonts embedded so that all the mathematical symbols and equations will project properly. This generally avoids the problem of incompatible PPT editors. A laser pointer and microphone will be provided for your use. Any additional technical equipment should be requested at least one month in advance of the presentation.

Each paper in an oral session is allocated 20 minutes. This includes time required for introduction of the speaker, as well as time for questions from the audience. Therefore authors are advised to prepare a 15-minute talk and leave 5 minutes for questions at the end. Keep the talk simple, and focus only on the major points. Have the talk simply arranged in a logical sequence and use simple, clear PowerPoint presentations. Avoid distractions. Know your talk well.

Please arrive at your session at least 10 minutes before the start of your session to

load up your file into the laptop in the room. If you choose to bring PPT slides with video clips on USB, you can bring your material in a couple of different PPT versions and try out prior to the presentation, or send your PPT slides to us in advance by e-mail asiaem2015@mail.xjtu.edu.cn. If you are forced to use your own laptop, the switchover of laptops occurs within your allotted 20 minute time slot. Please stick to the time schedule strictly. Two volunteers of ASIAEM 2015 in each meeting room may help you if you have any problems during the conference.

If you are a presenter in the plenary session on 5th August 2015, please note that you will have 25 minutes of presentation and 5 more minutes for Q&A. The Chair and Co-Chair of the Plenary Session will be in contact with you to obtain the material to introduce you.

If you have to be absent from the ASIAEM 2015 for some irresistible reasons, please inform the ASIAEM 2015 secretaries of your absence in advance via asiaem2015@mail.xjtu.edu.cn.

Contact persons:
Dr. Liqiong Sun: lqsun@mail.xjtu.edu.cn
Dr. Seungmoon Han: holyjoyhan@gmail.com

Guidelines for Poster Presenters

The poster sessions will be held in the entrance lobby of the International Conference Center (ICC, Jeju). You may set up your posters any time starting of the morning of your session. Your paper ID number will be prominently displayed on the poster board set aside for your use.

The poster board will be in landscape orientation, 4 feet x 8 feet (122 cm x 244 cm). Push pins will be provided for your use. Remain close to your poster during the whole session in order to be able to answer all the questions of the visitors. It's up to you to accept if pictures can be taken of your poster.

Paper poster layout guidelines and handout materials:

- Your poster should have a clear message, a logical layout and be easy to comprehend in a couple of minutes.
- Make sure that the specific sections (such as the background, methods, results and conclusions) are easy to locate on the poster.
- Design the individual sections of your poster so that they can be quickly read - avoid large blocks of text. Neither should the poster contain long sentences.
- Make sure that the type/font size is large enough to be read.
- Supporting images (graphs, tables, illustrations, photographs...) can be very helpful

and are often necessary to display results. Make sure that the images are easy to understand, and not overloaded with information.
•Make sure there is enough contrast between the color of the type and the poster's background.

If you have to be absent from the ASIAEM 2015 for some irresistible reasons, please inform the ASIAEM 2015 secretaries of your absence in advance via asiaem2015@mail.xjtu.edu.cn.

Contact persons:
Prof. Chang Su Huh: cshuh@inha.ac.kr
Dr. Seungmoon Han: holyjoyhan@gmail.com

Guidelines for the Sponsors and the Exhibitors

These guidelines are put in place to ensure that every exhibitor has an equal opportunity to display their products and services. Please take the time to ensure that your display meets these regulations to prevent unnecessary work on site.

Please ensure that you promote and display your company name within your space. Signage must be completely contained within the cubed boundaries of the rented space. Signs, fixtures or decorative materials must not overhang the aisles. Such signs, fixtures or materials must not encroach upon neighboring booths. Requests for approval to hang signs or banners should be submitted to the ASIAEM2015 Exhibition Committee no later than July 15th, 2015.

Exhibitors shall conduct business so as not to interfere with neighboring Exhibitors or cause annoyance to the public. The use of equipment such as microphones, radios, televisions, loud speakers, etc. must conform to acceptable decibel levels as established by the ICC.

The booth size is 3 meters x 3 meters x 2.5 meters with 1 fluorescent lamp, 3 spot lamps, 1 table and 2 chairs. All equipment or materials contained in the booth shall be in good structural and clean condition. The exhibition is open for visitors from 9:00 until 17:00.

Contact persons:
Dr. Woochul Park: king818@ktr.or.kr
Dr. Seungmoon Han: holyjoyhan@gmail.com

Guidelines for Award Finalists

Best Paper Award and Best Student Paper Award finalists: please follow the Guidelines for Oral Presentation. Students should follow the Poster Presenters Guidelines as well.

Finalists who have already received an invitation letter from the Awards Committee, please prepare a full paper (up to 8 pages) in more detail extending the results you've included in the extended abstract and send it to jfvegas@unal.edu.co up to June 29th, 2015 at 00h00 (GMT). For this full paper, please use the same paper format of the extended abstract. The work presented must be original (not published before in conferences or journals). The author will retain full copyright to this paper and may choose to submit it to another conference or journal in the future.

Best Student Paper Awards are scheduled in regular oral sessions and are also invited to make poster presentations.

Contact persons:
Prof. Felix Vega: jfvegas@unal.edu.co
Prof. Xinjie Yu: yuxj@tsinghua.edu.cn

Guidelines for the Audience

Please arrive five minutes before the start of the session. Do not interrupt the speaker by questions during her/his presentation. Questions are allowed only after the presentation if the chairman gives time for them. If you arrive in the meeting room during a presentation, wait for the end of the presentation to take a seat.

Please DO NOT take photographs of slides or make audio/video recordings of presentations or posters or presenters, unless specifically permitted by the speakers at the conference. Session Chairs are required to enforce this policy.

Contact persons:
Volunteers of ASIAEM 2015

A Quick Guide of the Technical Program

ROOMS		ROOM Samda A	ROOM Samda B
MONDAY	AM1: 09:00 -10:20	**WELCOME SESSION（Halla Hall）**	
	COFFEE BREAK		
	AM2: 10:40 -12:00	TC01-1 Narrowband Sources and Modeling *D. Giri & B. L. Qian*	SS04 Statistical Methods in HPEM *C. Kasmi & L. O. Fichte*
	LUNCH BREAK		
	PM1: 13:30 -14:50	TC01-2 Antennas – 1 *B. L. Qian & Y. Z. Chen*	TC07-1 Component and Device Modeling *J. Lee & S. Q. Zheng*
	COFFEE BREAK		
	PM2: 15:20 -17:00	TC01-3 Antennas – 2 *D. Giri & M. Nyffeler*	TC07-2 Source and Analytical Modeling *S. Q. Zheng & J. Lee*
TUESDAY	AM1: 09:00 -10:20	TC01-4 UWB Sources, Materials and Pulse Power *B. L. Qian & J. S. Choi*	TC07-3 Environment and Numerical Modeling *J. G. Yook & L. H. Shi*
	COFFEE BREAK		
	AM2: 10:40 -12:00	TC08 Bio Effects and Medical Applications L. O. Fichte & X. Y. Lu	TC03-1 Measurement Techniques and Related Analysis *L. H. Shi & M. Zingarelli*
	LUNCH BREAK		
	PM1: 13:30 -14:50	**POSTER SESSION**	
	COFFEE BREAK		
	PM2: 15:20 -17:00	SS07 Pulse Power Elements *X. J. Yu & X. L. Yao*	TC03-2 HPEM Field Measurements *Y. H. Zhou & M. Zingarelli*
WEDNESDAY	AM1: 09:00 -10:20	**PLENARY SESSION（Halla Hall）**	
	COFFEE BREAK		
	AM2: 10:40 -12:00	**PLENARY SESSION（Halla Hall）**	
	LUNCH BREAK		
	PM1: 13:30 -14:50	TC13-1 Transient Analysis *X. Wu & C. S. Huh*	TC03-3 Shielding Measurements *L. H. Shi & G. Y. Ni*
	COFFEE BREAK		
	PM2: 15:20 -16:40	TC13-2 Measurements and Devices *W. Radasky & J. Guo*	TC09-1 Measurements and Propagation *Y. J. Yoon & D. Giri*
THURSDAY	AM1: 09:00 -10:20	TC04-1 Detection and Analysis *J. G. Yook & W. Radasky*	TC09-2 Wideband Antennas *E. Farr & D. Giri*
	COFFEE BREAK		
	AM2: 10:40 -12:00	TC04-2 Coupling, Effects, Devices and Protection *W. Radasky & R. Hoad*	TC09-3 Theory and Applications *Y. J. Yoon & E. Farr*
	LUNCH BREAK		
	PM1: 13:30 -14:50	TC04-3 Protection *J. G. Yook & R. Hoad*	
	COFFEE BREAK		

ROOM 303	ROOM 301
WELCOME SESSION（Halla Hall）	
COFFEE BREAK	
TC02-1 Coupling to Analysis *M. Bäckström & L. O. Fichte*	SS05 HPEM Standards *R. Hoad & W. C. Park*
LUNCH BREAK	
TC02-2 Effects, Simulstion and Suppression *M. Bäckström & L. O. Fichte*	SS06-1 Coupling Analysis *J. S. Luo & C. Kasmi*
COFFEE BREAK	
SS02 HPEM Impacts on Critical Infrastructure *W. Radasky & R. Hoad*	SS06-2 Coupling to Aircraft *C. Kasmi & J. S. Luo*
TC11-1 Discrimination and Imaging *J. Sachs & A. X. Zhang*	TC05 System Level Protection and Testing *A. Kaelin & T. H. Jang*
COFFEE BREAK	
TC11-2 & TC12 Target Detection UXO Landmine & IED Detection and Neutralization UWB Radar Systems *V. Koshelev & J. Sachs*	SS03 Devices and Analysis X. J. Yu & F. Vega
LUNCH BREAK	
POSTER SESSION	
COFFEE BREAK	
SS01 Devices, Protection and Test Methods *T. H. Jang & A. Kaelin*	
PLENARY SESSION（Halla Hall）	
COFFEE BREAK	
PLENARY SESSION（Halla Hall）	
LUNCH BREAK	
TC06-1 Lightning Incidence *Z. J. Wang & M. Rubinstein*	
COFFEE BREAK	
TC06-2 Lightning Effects and Protection *F. Rachidi & Z. J. Wang*	

The Time Schedule of Technical Sessions

Sunday August 2, 2015

Registration

Registration desk will be located in the lobby of ICC, and will be opened

Sunday	August 2, 2015	14:00 – 20:00
Monday	August 3, 2015	08:30 – 12:00

At registration, participants will receive a U-disk with the conference proceedings and all other printed materials.
For registration after 12:00 pm on Monday, please visit the Local Organizing Committee's Room, which is located at Room 300 in ICC.

Monday August 3, 2015

Welcome Session (in Halla Hall)

(Chairs: Yanzhao Xie & Chang Su Huh)

9:00 – 9:10 **Conference General Chair Welcome Address**
Prof. Yanzhao Xie, Xi'an Jiaotong University, China

9:10 – 9:20 **Technical Program Committee Chair Welcome Address**
Dr. Dave Giri, Pro-Tech, U.S.A.

9:20 – 9:25 **Conference General Co-Chair Welcome Address**
Prof. Chang Su Huh, Inha University, Republic of Korea

9:25 – 9:30 **Welcome Address**
Dr. Jin Kyung Jung, ADD, Republic of Korea

9:30 – 10:20 **Keynote Speech: Development of UHV Transmission and Insulation Technology in China**
Prof. Shengtao Li, Xi'an Jiaotong University, China

10:20 – 10:40 **Coffee Break**

Monday August 3, 2015

TC01 - 1	ID	Narrowband Sources and Modeling	Room Samda A

Chairs: Dave Giri and Baoliang Qian

10:40 – 11:00	**16**	**Optimization of a Virtual Cathode Oscillator Using NSGA-II Evolutionary Algorithm** *E. Neira, F. Vega, J.J. Pantoja*
11:00 – 11:20	**80**	**A Compact Relativistic Magnetron with an Axial Output of TE_{11} Mode** *Di-Fu Shi, Bao-Liang Qian, Yi Yin, Hong-Gang Wang, Wei Li*
11:20 – 11:40	**43**	**UWB HPEM generator with changeable pulse waveform for IEMI testing** *Jin-Ho Shin, Young-Kyung Jeong, Dong-Gi Youn*
11:40 – 12:00	**44**	**Radiation Pattern of a Guided Wave NEMP Simulator** *Rakesh Kichouliya, M. Joy Thomas*

SS04	ID	Statistical Methods in HPEM	Room Samda B

Chairs: Chaouki Kasmi and Lars-Ole Fichte

10:40 – 11:00	**73**	**Real-Time Radiated tests optimization using a bootstrap module** *C. Kasmi, S. Lallechère, S. Girard, P. Bonnet, F. Paladian*
11:00 – 11:20	**93**	**Threshold Probability Model for EMP Effects Evaluation** *Kejie LI, Yanzhao XIE, Yury V. Parfenov*
11:20 – 11:40	**29**	**Application of the Random Coupling Model to Statistical Properties of Complex Enclosures** *Bo Xiao, Thomas Antonsen, Edward Ott, Steven M. Anlage*
11:40 – 12:00	**112**	**On the Statistical Validity of HEPM Field Tests** *Lars Ole Fichte, Sven Knoth, Marcus Stiemer*

TC02 - 1	ID	Coupling to Analysis	Room 303

Chairs: Mats Bäckström and Lars-Ole Fichte

10:40 – 11:00	**8**	**HEMP Conducted Environment Analysis for Cable Lying on Ground** *Sun Beiyun, Yang Jing*
11:00 – 11:20	**30**	**Nonlinear and Short-Orbit Time-Reversal in a Wave Chaotic System** *Bo Xiao, Thomas Antonsen, Edward Ott, Steven M. Anlage*
11:20 – 11:40	**140**	**Analysis of the Compromising Electromagnetic Emanations of PS/2 Keyboards** *Ho Seong Lee, Dong-Joo Sim, Kyuhong Sim, Jong-Gwan Yook*

SS05	ID	HPEM Standards	Room 301

Chairs: Richard Hoad and Woo-Chul Park

10:40 – 11:00	**129**	**Overview of HPEM Standards Produced by IEC SC 77C** *Richard Hoad, William A. Radasky*
11:00 – 11:20	**148**	**An overview of two recent IEMI publications: IEEE Std 1642 and Cigré Technical Brochure 600** *W. A. Radasky*
11:20 – 11:40	**192**	**A brief review of the root action norm for waveform analysis** *E. Schamiloglu*
11:40 – 12:00	**78**	**Some standardization problems of high power electromagnetic pulses, formed by test facilities** *Yury V. Parfenov, Boris A. Titov, Leonid N. Zdoukhov, William A. Radasky*

Monday August 3, 2015

TC01 - 2	ID	Antennas - 1	Room Samda A

Chairs: Yazhou Chen and Baoliang Qian

13:30 – 13:50	**2**	**The Effect of Conductor Size on Helical Antennas** *D. V. Giri, F. M. Tesche*
13:50 – 14:10	**66**	**Design of a Portable Rectangular Generator Based on MOSFET and Avalanche Transistor** *QIAO Bing-bing, GUO Jie, LI Ke-lun*
14:10 – 14:30	**79**	**Frequency, Time, and Thermal Domain Analysis of Planar Bi-Directional Log-Periodic Antenna** *J. Ha, M.A. Elmansouri, D.S. Filipovic*
14:30 – 14:50	**110**	**Comparative analysis of directivity and gain in according to Antenna's dielectric- shape** *Ruck-Woan Kim, Jin-Wook Park, Seung-Moon Han, Chang-su Huh*

TC07 - 1	ID	Component and Device Modeling	Room Samda B

Chairs: Jongwon Lee and Shengquan Zheng

13:30 – 13:50	**39**	**Transient Voltage Responses of Multilayered PCBs in Metallic Enclosure Illuminated by Periodic Electromagnetic Pulse** *Yuna Kim, Jin-Kyoung Du, Se-Young Hyun, Jong-Gwan Yook, Jongwon Lee, Jin Soo Choi*
13:50 – 14:10	**42**	**Circuit model for two propagation paths of high power electromagnetic pulse** *Kun-A Lee, Young-Maan Cho, Kwang-Cheol Ko*
14:10 – 14:30	**149**	**Particle Simulation of Coaxial VIRCATOR** *S. H. Han, J. S. Choi, S. H. Baek, T. Hurtig*
14:30 – 14:50	**191**	**Prediction of EMP Coupling to Multi-conductor Transmission Lines by Using Different Iteration Methods** *Jun Guo, Yan-zhao Xie*

TC02 - 2	ID	Effects, Simulation and Suppression	Room 303

Chairs: Mats Bäckström and Lars-Ole Fichte

13:30 – 13:50	**138**	**A study for the effect of external incident wave on the simplified vehicle model** *Wonjune Kang, Junho Choi, Joonho So, Kangin Lee, Youngseek Chung*
13:50 – 14:10	**159**	**Ultra-wideband Electromagnetic Bandgap Structure with Multi-slot for Simultaneous Switching Noise Suppression** *J. H. Choi, J. W Shin, J. H. So*

SS06 - 1	ID	Coupling Analysis	Room 301

Chairs: Jianshu Luo and Chaouki Kasmi

13:30 – 13:50	**9**	**The Discrete Method of BLT Equation on Non-parallel Two-Wire Transmission Line** *Mengshi Zhang, Guyan Ni, Min Zhou*
13:50 – 14:10	**14**	**The tensor field equation of systematic electromagnetism and its exterior form representation** *Shaorong Chen, Xiang Li, Xishun Liu, Jianshu Luo, Zhuangzhuang Tian, Jun Zhang*
14:10 – 14:30	**20**	**Nyström methods for Hallén's Equation of thin wire antennas** *Y. K. Wang, Y. Li, J. S. Luo*
14:30 – 14:50	**21**	**Crosstalk analysis of PCB traces based on BLT equations and equivalent multi-conductor transmission line model** *Y. Li, G. Y. Ni, X. D. Chen*

Monday August 3, 2015

TC01 - 3	ID	Antennas - 2	Room Samda A

Chairs: Dave Giri and Markus Nyffeler

15:20 – 15:40	**133**	**Design of a smart phased array antenna for IEMI applications** *Jinwoo Shin, Junho Choi, Woosang Lee, Joonho So*
15:40 – 16:00	**154**	**Effects of the Earth Ground on the Radiation Performance of Log-Periodic Dipole Antennas** *Xiang Gao, Zhongxiang Shen*
16:00 – 16:20	**157**	**E-shaped Patch Antennas Fed with Ultra-short Pulses for Radiating High-power Mesoband Pulses** *Kiho Kim, Jiheon Ryu, Jin Soo Choi*
16:20 – 16:40	**27**	**High-power sources of ultrawideband radiation pulses with elliptic polarization** *V. I. Koshelev, Yu. A. Andreev, A. M. Efremov, B. M. Kovalchuk, A. A. Petkun, V. V. Plisko, K. N. Sukhushin, M. Yu. Zorkaltseva*

TC07 - 2	ID	Source and Analytical Modeling	Room Samda B

Chairs: Shengquan Zheng and Jongwon Lee

15:20 – 15:40	**103**	**Time Marching Method Instability: a Deconvolution Approach** *Juan Miguel David Becerra Tobar, Jose Félix Vega Stravo, John Jairo Pantoja Acosta*
15:40 – 16:00	**123**	**Development of the HEMP Propagation Analysis and Optimal Hardening Shelter Design, Simulation Tool "KTI HEMP CORD"** *GyungChan Min, YeongKwan Jung*
16:00 – 16:20	**126**	**Electromagnetic Simulation Models for Wideband Pulse Generators Driven By a High-voltage Spark-gap Switch** *Jiheon Ryu, Jaimin Lee, Jin Soo Choi, Sung-Hyun Baek, Jin Kyung Jung*
16:20 – 16:40	**52**	**A methodology for numerical calculation of isotropic aperture transmission cross section** *R. Gunnarsson, M. Bäckström*
16:40 – 17:00	**63**	**Calculation of 500kV AC transmission line 3D power frequency electric field by equivalent charge curvilinear integral method** *Gu Shanqiang, Su Jie, Ren Hua, Li Di, Li Chunsheng, He Yichuan*

SS02	ID	HPEM Impacts on Critical Infrastructure	Room 303

Chairs: William Radasky and Richard Hoad

15:20 – 15:40	**54**	**Laboratory test of the IEMI vulnerability of a security surveillance camera** *E. B. Savage, W. A. Radasky*
15:40 – 16:00	**115**	**Study of the Propagation of IEMI Signals along Power and Communication Lines** *N. Mora, G. Lugrin, F. Rachidi, M. Nyffeler, P. Bertholet, M. Rubinstein*
16:00 – 16:20	**55**	**Laboratory tests of the IEMI/HEMP vulnerability of some low power switched-mode power supplies (SMPS)** *E. B. Savage, W. A. Radasky*
16:20 – 16:40	**116**	**Effect of the Penetration through a Concrete Wall on the Propagation of Common Mode IEMI Signals** *N. Mora, G. Lugrin, F. Rachidi, M. Nyffeler, P. Bertholet, M. Rubinstein*
16:40 – 17:00	**56**	**IEMI laboratory tests of network line protectors: vulnerability and protection ability** *E. B. Savage, W. A. Radasky*

SS06 - 2	ID	Coupling to Aircraft	Room 301

Chairs: Chaouki Kasmi and Jianshu Luo

15:20 – 15:40	**19**	**Measurement result and analysis of aeronautical cables at high frequency range** *Z. L. Tong, J. S. Luo, H. Lei, Y. F. Liu, X. S. Liu, C. X. Tang*
15:40 – 16:00	**96**	**Electromagnetic topology analysis and Simulation of electromagnetic coupling of cable bundle of aircraft platform system** *J. S. Luo, H. Wang*
16:00 – 16:20	**97**	**Iterative QR Method for Multi-conductor Transmission Line Equation** *H. Wang, J. S. Luo*

Tuesday August 4, 2015

TC01 - 4	ID	UWB Sources, Materials and Pulse Power	Room Samda A

Chairs: Baoliang Qian and Jin Soo Choi

09:00 – 09:20	**18**	**Investigation of laser triggered transformer-type high voltage pulse generator** *Yi Yin, Tian-yang Zhang, Bao-Liang Qian, Jin-Liang Liu, Jian-Hua Yang*
09:20 – 09:40	**109**	**A Miniature Pulse Generator** *Xing Zhou， Min Zhao, Qingxi Yang*
09:40 – 10:00	**121**	**Design Consideration of Marx Generator for a Continuous Operation at a High Repetition Rate** *Jeong-Hyeon Kuk, Dong-Woo Yim, Jin-Soo Choi, Sun-Mook Hwang, Tae-Hyun Lim*
10:00 – 10:20	**137**	**Operation Characteristics of Repetitive Nanosecond High-Voltage Pulse Generator using Marx Generator by Self-breakdown** *SunMook Hwnag, DongWoo Yim, JungHyun Kuk*

TC07 - 3	ID	Environment and Numerical Modeling	Room Samda B

Chairs: Jong-Gwan Yook and Lihua Shi

09:00 – 09:20	**23**	**Transient response prediction using minimum phase method based on system simulation** *Chen Peng, Sun Dongyang, Wu Gang, Chen Weiqing*
09:20 – 09:40	**37**	**Fourier-Collocation Method for the Surface Current Distribution On the Thin Antenna** *H. K. Lin, J. S. Luo, L. Sun, W. X. Hou*
09:40 – 10:00	**46**	**Parallelization of QR Decomposition Algorithm in Multiconductor Transmission Line Equation Based on CUDA** *Yao Liu, Min Zhou, Yang Cai*
10:00 – 10:20	**26**	**Shielding Effect Analysis to Square Waves of Slotted Cavity Based on Shielding Effectiveness Curves** *HU Xiao-feng, Liu Weidong, Chen Xiang， Wei Ming*

TC11 - 1	ID	Discrimination and Imaging	Room 303

Chairs: Jürgen Sachs and Anxue Zhang

09:00 – 09:20	**144**	**Adaptive range migration algorithm using optimization technique for SAR imaging** *Yong-Sun Cho, Sang-Hoon Jung, JaeJoong Lee, Hyun-Kyo Jung*
09:20 – 09:40	**153**	**The Far-field Radiometry Applied to the Near-field case for Microwave Radiometric Imaging** *Rae-Seoung Park, Jihyun Jang, Byungdeok Park, Young-Seek Chung, Changyul Cheon*
09:40 – 10:00	**143**	**A new design of TEM UWB antenna for ISAR imaging** *Shitao Zhu, Anxue Zhang, Zhuo Xu, Xiaoli Dong*

TC05	ID	System Level Protection and Testing	Room 301

Chairs: Armin Kaelin and Tae-Heon Jang

09:00 – 09:20	**147**	**Frequency Domain Analysis of Penetrated Ultra Wideband Signal in Large Scale Structure** *Jongwon Lee, Seungho Han, Jin Soo Choi*
09:20 – 09:40	**47**	**Assessment of HEMP-survivability of Photovoltaic Generators** *Markus Nyffeler, Armin W. Kaelin*
09:40 – 10:00	**117**	**Experiment research on response of typical SPD to different EMP** *Zhou Ying-hui, Du Mingxin, Shi Lihua, Zeng Jie*
10:00 – 10:20	**49**	**Threat-level HEMP-tests of Photovoltaic Panels and Components** *Markus Nyffeler, Armin W. Kaelin, Alex Hauser*

Tuesday August 4, 2015

TC08	ID	Bio Effects and Medical Applications	Room Samda A

Chairs: Lars-Ole Fichte and Xiaoyun Lu

10:40 – 11:00	**189**	**The effect of standard cell culture environment on cellular electromagnetic effects study** *Wen-yu Peng, Jian-gang Ma, Xiao-yun LU, Yan-zhao XIE*
11:00 – 11:20	**3**	**An In vitrochondrocyte electrical stimulation framework: A methodology to calculate electric fields and assessproliferation, cell death and glycosaminoglycan synthesis** *J.J. Vaca-González, J.M. Guevara, J.F. Vega, D.A. Garzón-Alvarado*
11:20 – 11:40	**113**	**Recent Research Activities to Investigate the Interaction of Electromagnetic Waves and Cells of the Haematopoietic System** *Lars Ole Fichte, Marcus Stiemer*

TC03 - 1	ID	Measurement Techniques and Related Analysis	Room Samda B

Chairs: Lihua Shi and Michele Zingarelli

10:40 – 11:00	**35**	**Determination of Q-value of an Avionics Bay or Other Multiresonant Cavity by Measurements in Time- and FrequencyDomain, with One or Two Antennas** *B. Vallhagen, C. Samuelsson, M. Bäckström*
11:00 – 11:20	**135**	**Response Characteristic of Low Voltage Surge Protective Components under Nanosecond Pulse** *Yao Xueling, Sun Jinru, Chen Antong, Chen Jingliang*
11:20 – 11:40	**180**	**Vectorial analysis of intense electromagnetic field using a non-invasive optical probe** *G. Gaborit, L. Gillette, P. Jarrige, J. Dahdah, T. Trève, L. Duvillaret*

TC12 & TC11 - 2	ID	Target Detection UXO Landmine & IED Detection and Neutralization UWB Radar Systems	Room 303

Chairs: Anxue Zhang, Vladimir Koshelev, Jürgen Sachs and Felix Vega

10:40 – 11:00	**100**	**The effect of ANFO on the Complex Resonance Frequencies of an IED** *S. A. Gutierrez, E. Neira, J. J. Pantoja, F. Vega*
11:00 – 11:20	**177**	**Active Detection of Fissile Materials via Laser-Induced Ionization-Seeded Plasmas** *Geehyun Kim, Mark Hammig*
11:20 – 11:40	**28**	**Detection of metal objects by ultrawideband pulses with different polarization** *V.I. Koshelev, E.V. Balzovsky, Yu.I. Buyanov, E.S. Nekrasov, A.A. Petkun, V.M. Tarnovsky*

SS03	ID	Devices and Analysis	Room 301

Chairs: Xinjie Yu and Felix Vega

10:40 – 11:00	**48**	**Application of varistor for RF protection of semiconductor bridge** *Bin Zhou, Jun Wang, Pei-kang Du, Yong Li*
11:00 – 11:20	**105**	**Wideband Differential Technique to Measure the Input Impedance of Electro-Explosive Devices** *John J. Pantoja, Néstor Peña, Ernesto Neira, Félix Vega, Francisco Roman*
11:20 – 11:40	**111**	**Research on Induction Current of Bridge Wire of Industrial Electric Caps using FDTD Arithmetic** *DU Bin, Luan Ying*
11:40 – 12:00	**99**	**Simulation of protective effect of several protective devices to sensitive EED under extreme ESD environment** *Zhixing Lv, Nan Yan, Wei Ren, Yingwei Bai*

Poster Session

Introduction on Tuesday Afternoon (13:30 – 14:50)

Chairs: Chang Su Huh and Seungmoon Han

Group 1

12 **On the Unconditionally Stable FDTD Method Based on Associated Hermite Functions**
Huang Zhengyu, Shi Lihua, Zhang Zhixin

17 **Study on Statistical Characteristic of Transient Disturbances and Correlation with Immunity Waveform**
Zhang Weidong, Zhang Xiaoli, Luo Guangxiao

31 **Breakdown Characteristics of Si Bipolar Junction Transistor Injected with Microwave Pulses**
Cunbo Zhang, Honggang Wang, Jiande Zhang, Baoliang Qian, Guangxing Du

86 **Failure Rate Analysis of Solid State Device Caused by Repeated Pulse Characteristics**
Ki-Hoon Park, Kwan-Sik Kim, Chang-Su Huh, Jin-Soo Choi, Jong-Won Lee

118 **Simulation Model of Electric Shock Human Body suffered under AC Transmission Line**
Huichun Xie, Xiuying Li

119 **Measurement of TEV of 1000kV UHV Gas Insulated Switchgear**
Jun Zhao, Jiangong Zhang, Huichun Xie, Zheyuan Gan

136 **Experimental Research on Rod-shaped Triggered Gas Switch**
Chen Jingliang, Lei Wanglong, Yao Xueling

141 **Pulse Compression for OFDM based Ground Penetrating Radar**
Shi Zheng, Xuehan Pan, Anxue Zhang

142 **A Valentine Antenna Working in 150 MHz – 350 MHz Band for UWB Application**
Xuehan Pan, Shi Zheng, Anxue Zhang

166 **Experiment of a Ku-band Gyro-BWO on Square waveguide**
K. H. Jang, J. J. Choi, S. W. Jung

168 **Field uniformity area assessment using a hyper-band HIRA**
Tae Heon Jang, Jae Han Cho, Won Seo Cho

173 **Parametric analysis of STRETCH meat grinder circuit based on equivalent induction theory**
Jianmin Ding, Xinjie Yu, Zanji Wang

174 **Overview of test methods for HEMP protective filters in Korea**
Tae Heon Jang, Hyo Sik Choi, Won Seo Cho

185 **Coupling Effects According to the Orientations of Multi-layered PCB and Aperture inside a Metallic Enclosure**
Jin-Kyoung Du, Yuna Kim, Jongwon Lee, Jin Soo Choi, Jong-Gwan Yook

194 **Propagation Characteristics of the UWB EM Wave in Soil Media and its Influence on the Detection of Buried Unexploded Ordnance**
S. Vijayakumar, M. Joy Thomas

Group 2

9 **The Discrete Method of BLT Equation on Non-parallel Two-Wire Transmission Line**
Mengshi Zhang, Guyan Ni, Min Zhou

33 **Frequency Response Analysis of IEMI in Different Types of Electrical Networks**
Bing Li, Daniel Månsson

38 **Analysis of Transmission Characteristic of Composite Material with Wire Mesh and Honeycomb Core in Aircraft**
Se-Young Hyun, Ic-Pyo Hong, Chilsung Jung, Eung-Jo Kim, Jong-Gwan Yook

46 **Parallelization of QR Decomposition Algorithm in Multiconductor Transmission Line Equation Based on CUDA**
Yao Liu, Min Zhou, Yang Cai

50 **On the Applicability of the Transmission Line Theory for the Analysis of Common-Mode IEMI-Induced Signals**
G. Lugrin, N. Mora, F. Rachidi, M. Nyffeler, P. Bertholet, M. Rubinstein, S. Tkachenko

76 **Experimental comparison of mode-stirrer geometries for EMC**
V. Houchouas, C. Kasmi, J. Lopes Esteves, D. Coiffard

79 **Frequency, Time, and Thermal Domain Analysis of Planar Bi-Directional Log-Periodic Antenna**
J. Ha, M.A. Elmansouri, D.S. Filipovic

80 **A Compact Relativistic Magnetron with an Axial Output of TE_{11} Mode**
Di-Fu Shi, Bao-Liang Qian, Yi Yin, Hong-Gang Wang, Wei Li

103 **Time Marching Method Instability: a Deconvolution Approach**
Juan Miguel David Becerra Tobar, Jose Félix Vega Stravo, John Jairo Pantoja Acosta

107 **Correlation between air surface temperature and lightning events in Colombia during the last 15 years**
F. Diaz, F. Roman

115 **Study of the Propagation of IEMI Signals along Power and Communication Lines**
N. Mora, G. Lugrin, F. Rachidi, M. Nyffeler, P. Bertholet, M. Rubinstein

146 **Simple printed structures for low-cost and effective protection against UWB pulses**
A.T. Gazizov

Tuesday August 4, 2015

SS07 - 1	ID	Pulse Power Elements	Room Samda A

Chairs: Xinjie Yu and Xueling Yao

15:20 – 15:40	**161**	**Transient Analysis Method of Pulsed Power Circuit** *Seong-Ho Kim, Young-Hyun Lee, Byungha Lee, Jin Hyuk Chung, Sanghyuk An*
15:40 – 16:00	**172**	**Saturation of Amorphous-Core Tesla Transformer Applied to Pulsed High-Voltage Generator** *C. H. Kim, H. O. Kwon, J. S. Choi*
16:00 – 16:20	**163**	**Development of small electromagnetic railgun launch device for inductive pulsed power supply** *Rui Ban, Xinjie Yu, Zhen Li, Zanji Wang*
16:20 – 16:40	**165**	**Performance Evaluation of an Experimental Railgun** *Young-Hyun Lee, Seong-Ho Kim, Byungha Lee, Jin Hyuk Chung, Sanghyuk An*
16:40 – 17:00	**158**	**An automatic fragmenting and triggering method for capacitive pulse forming units of the electromagnetic railgun** *Xukun Liu, Xinjie Yu, Xiucheng Liu and Zanji Wang*

TC03 - 2	ID	HPEM Field Measurements	Room Samda B

Chairs: Ying Hui Zhou and Michele Zingarelli

15:20 – 15:40	**15**	**Design of a compact free-field sensor with fiber-optic link for EMP measurement** *Lihua Shi, Rongen Si, Yinghui Zhou*
15:40 – 16:00	**76**	**Experimental comparison of mode-stirrer geometries for EMC** *V. Houchouas, C. Kasmi, J. Lopes Esteves, D. Coiffard*
16:00 – 16:20	**95**	**Destructive High-Power Microwave Testing of Electronic Circuits using a Reverberation Chamber** *Tomas Hurtig, Leif Adelöw, Mose Akyuz, Mattias Elfsberg, Anders Larsson, Sten E Nyholm*
16:20 – 16:40	**146**	**Simple printed structures for low-cost and effective protection against UWB pulses** *A.T. Gazizov*

SS01	ID	Devices, Protection and Test Methods	Room 303

Chairs: Tae-Heon Jang and Armin Kaelin

15:20 – 15:40	**57**	**Low Insertion Loss Energy Sensitive Bandpass Filter to Protect Ku-Band Receivers from HPEM Threats** *W. A. Arriola, T. H. Jang, J. Y. Ahn, I. S. Kim*
15:40 – 16:00	**145**	**Key Design Technologies of RF Front-end Protection Module with Ultra-low Limited Output Power** *Dongdong Wang, Lan Gao, Shengquan Zheng, Feng Deng, Dongyun Hou*
16:00 – 16:20	**34**	**Characterization of Limiters for HPM and UWB Front-Door Protection** *T. Nilsson, M. Bäckström*
16:20 – 16:40	**69**	**Reliable HEMP Protective Devices for the Power Line** *Joon-Hyuck Kwon, Ki-Hwan Song, Jong-Gwan Yook*
16:40 – 17:00	**70**	**HEMP Protective Devices for Signal and Control Lines** *Joon-Hyuck Kwon, Jin-Ho Lee, Jong-Gwan Yook*

Wednesday August 5, 2015

Plenary Session

(09:00 – 12:00)

(Chairs: Yanzhao Xie & Chang Su Huh)

Halla Hall

Title: An overview of research on high power wideband radiators in ADD
09:00 ~ 09:25 | Wednesday August 5, 2015
Speaker: Dr. Jiheon Ryu, Agency for Defense Development, Repulic of Korea

Title: Recent Progresses of Lightning Research in E3OE
09:25 ~ 09:50 | Wednesday August 5, 2015
Speaker: Prof. Lihua Shi, Key Lab. on E3OE, China

Title: Update of High Power EM (HPEM) Protection for the Critical Infrastructures
09:50 ~10:15 | Wednesday August 5, 2015
Speaker: Dr. William Radasky, Metatech, USA

10:20 ~10:40 **Coffee Break**

Title: An approach to HPM Protection and Verification Based on the Method of Power Balance
10:40 ~11:05 | Wednesday August 5, 2015
Speaker: Prof. Mats Bäckström, Royal Institute of Technology, Sweden

Title: Known and Suspected Interactions between Electromagnetic Waves and Biological Tissue
11:05 ~11:30 | Wednesday August 5, 2015
Speaker: Prof. Lars Ole Fichte, Helmut Schmidt University, Germany

Title: Some recent HPEM research activities at SKLEI, Xi'an Jiaotong University
11:30 ~11:55 | Wednesday August 5, 2015
Speaker: Prof. Yanzhao Xie, Xi'an Jiaotong University, China

Title: Introduction to EUROEM 2016
11:55 ~12:00 | Wednesday August 5, 2015
Speaker: Richard Hoad, QinetiQ, UK

Wednesday August 5, 2015

TC13 - 1	ID	Transient Analysis	Room Samda A

Chairs: Xiong Wu and Chang Su Huh

13:30 – 13:50	**24**	**Modelling and analyzing of HEMP coupling to overhead multiconductor transmission lines** *Ni LI, Jun GUO, Jian-gong ZHANG, Qing LIU, Yan-zhao XIE*
13:50 – 14:10	**62**	**Simulation Research of Offshore Wind Farm Lightning Intruding Overvoltage Based on ATP/EMTP** *XU Yang, LIU Wenbo, WANG Yu, LAN Lei, ZHU Sheng*
14:10 – 14:30	**64**	**Calculation and Analysis on Transient Induced Voltage of Multiple Parallel UHV Transmission Lines** *ZHANG Gongda, ZHOU Peihong, ZHANG Xiaoqing, YUE Lingping*
14:30 – 14:50	**65**	**Study of Influence Factors of Transient Enclosure Voltages in GIS** *CHEN Shu, GUO Jie, LI Kelun*

TC03 - 3	ID	Shielding Measurements	Room Samda B

Chairs: Lihua Shi and Guyan Ni

13:30 – 13:50	**190**	**Cutting-off Coupling Effects caused by Coaxial Cables while measuring Electric Field with ROD Antennas** *Michele Zingarelli, Roberto Grego*
13:50 – 14:10	**127**	**Effect of Different Factors on Parameters in Noncontacted Electrostatic Discharge** *Fangming Ruan, Wenjun Xiao, Hu Shengbo, Xiaohong Yang*

TC06 - 1	ID	Lightning Incidence	Room 303

Chairs: Zanji Wang and Marcos Rubinstein

13:30 – 13:50	**107**	**Correlation between air surface temperature and lightning events in Colombia during the last 15 years** *F. Diaz, F. Roman*
13:50 – 14:10	**45**	**Lightning occurrence data observed with lightning location systems of electric power companies in Japan: 2009-2013** *Takatoshi Shindo, Hideki Motoyama, Toru Miki, Mikihisa Saito, Akiyori Matsueda, Noriyasu Honma, Akira Matsumoto, Kazuo Shinjo, Kiyotaka Hayashi, Hayato Awazu, Katsuhisa Makabe, Masato Fujikawa, Satoshi Kurihara, Masashi Sato*
14:10 – 14:30	**131**	**On the Classification of Tower Flashes as Self-Initiated and Other-Triggered** *M. Rubinstein, Alexander Smorgonskiy, F. Rachidi, J. Zuber*
14:30 – 14:50	**179**	**Interference on the electric field of Corona Needle Electrode caused by its supporting structure** *Oscar Montero, Javier Araque, Francisco Roman*

Wednesday August 5, 2015

TC13 - 2	ID	Measurements and Devices	Room Samda A

Chairs: William Radasky and Jie Guo

15:20 – 15:40 **87** **Characteristics Analysis of Metal Oxide Arresters in GIS Excited by Very Fast Impulse**
Jie Chen, Jie Guo, Ai-ci Qiu

15:40 – 16:00 **124** **Influence of Ground Wires on Ion Flow Field around HVDC Transmission Lines**
Bo Zhang, Jinliang He

16:00 – 16:20 **187** **Transient Electric Field Caused by High-voltage Circuit Breaker's Switching Operation**
Xu Kong, Yan-zhao Xie, Qing Liu, Shao-Fei Wang, Xue-mei Sun, Yu-Hao Chen

TC09 - 1	ID	Measurements and Propagation	Room Samda B

Chairs: Young-Joong Yoon and Dave Giri

15:20 – 15:40 **68** **On the characteristic impedance of parallel-plate transmission line with plates of unequal breadths**
Wang Shaofei, Xie Yanzhao, Du Leiming, Li Kejie

15:40 – 16:00 **151** **Optimization of HEMP Simulator Antenna for Improving Test Area Field Distribution**
Zheng Sheng-quan, Deng Feng, Wang Dong-dong, Hou Dong-yun

16:00 – 16:20 **188** **Analysis of the Induced Electromagnetic Field in the surroundings of a NEMP simulator**
B. Daout, N. Mora, M. Sallin, C. Romero, F. Vega, F. Rachidi

16:20 – 16:40 **170** **Experimental Verification of a Wideband Patch Antenna for Application to High-power Wideband Radiators**
Taehyun Lim, Haeok Kwon, Jiheon Ryu, Dong Woo Yim, Jin Soo Choi

TC06 - 2	ID	Lightning Effects and Protection	Room 303

Chairs: Farhad Rachidi and Zanji Wang

15:20 – 15:40	**104**	**Influence of Grounding Device Models on Lightning Protection Characteristics of Transmission lines with Different Rated Voltages** *Jinliang He, Jinpeng Wu, Bo Zhang*
15:40 – 16:00	**114**	**Effect of Nearby Building on Horizontal Electric Field from Lightning Return Strokes** *Fei Guo, Zhi-dong Jiang, Bi-hua Zhou*
16:00 – 16:20	**5**	**FDTD simulation of lightning-induced currents on a buried cable with a shield wire** *Hiroki Tanaka, Yoshihiro Baba, Celio Fonseca Barbosa*
16:20 – 16:40	**178**	**Lightning Protection Design Based on Energy Calculation** *John J. Pantoja, Francisco Roman, Francisco Amórtegui*

Thursday August 6, 2015

TC04 - 1	ID	Detection and Analysis	Room Samda A

Chairs: Jong-Gwan Yook and William Radasky

09:00 – 09:20	**25**	**The detector of dangerous pulse electromagnetic interferences: conception of creation** *Yury V. Parfenov, Boris A. Titov, Leonid N. Zdoukhov, Xie Yanzhao*
09:20 – 09:40	**50**	**On the Applicability of the Transmission Line Theory for the Analysis of Common-Mode IEMI-Induced Signals** *G. Lugrin, N. Mora, F. Rachidi, M. Nyffeler, P. Bertholet, M. Rubinstein, S. Tkachenko*
09:40 – 10:00	**33**	**Frequency Response Analysis of IEMI in Different Types of Electrical Networks** *Bing Li, Daniel Månsson*
10:00 – 10:20	**38**	**Analysis of Transmission Characteristic of Composite Material with Wire Mesh and Honeycomb Core in Aircraft** *Se-Young Hyun, Ic-Pyo Hong, Chilsung Jung, Eung-Jo Kim, Jong-Gwan Yook*

TC09 - 2	ID	Wideband Antennas	Room Samda B

Chairs: Everett Farr and Dave Giri

09:00 – 09:20	**41**	**Radiation characteristics of a high-power ultrawideband pulse radiating antenna** *Jae Sik Kim, Young Joong Yoon, Jiheon Ryu, Jin Soo Choi*
09:20 – 09:40	**139**	**Modified two-element TEM horn array for radiating UWB electromagnetic pulses** *Chunming Tian, Peiwu Qiao, Yanzhao Xie, Juan Chen*
09:40 – 10:00	**176**	**Low-Frequency-Compensated Horn Antenna: for the Simulation of HEMP** *Shaofei Wang, Yanzhao Xie*

Thursday August 6, 2015

TC04 - 2	ID	Coupling, Effects, Devices and Protection	Room Samda A

Chairs: William Radasky and Richard Hoad

10:40 – 11:00	**108**	**Destruction Characteristic of CMOS AND gate by Variable Pulse repetition rate** *Jeong-Ju Bang, Sun-Ho Choi, Chang-Su Huh, Jin-Soo Choi, Jong-Won Lee*
11:00 – 11:20	**51**	**Test of Surge Protective Devices to Mitigate Intentional Electromagnetic Interferences (IEMI)** *G. Lugrin, N. Mora, F. Rachidi, P. Bertholet, M. Nyffeler, A. Kälin, S. Sliman, M.Rubinstein*
11:20 – 11:40	**75**	**IEMI and Smartphone Security: a smart use of front door coupling for remote command execution** *C. Kasmi, J. Lopes-Esteves*
11:40 – 12:00	**77**	**A survey of typical sudden commencement geomagnetic storm environments** *W. A. Radasky, E. B. Savage*

TC09 -3	ID	Theory and Applications	Room Samda B

Chairs: Everett Farr and Young-Joong Yoon

10:40 – 11:00	**155**	**Miniaturized COBRA for HPEM System** *Jihwan Ahn, Young Joong Yoon*
11:00 – 11:20	**167**	**Optimization of Offset Parabolic Antennas based on Genetic Algorithm** *Junggeun Park, Young-seek Chung, Wonjune Kang, Kang-in Lee, Hojun Yoon*
11:20 – 11:40	**11**	**Examples of the Power Wave Theory of Antennas** *E. G. Farr*

Thursday August 6, 2015

TC04 - 3	ID	Protection	Room Samda A

Chairs: Jong-Gwan Yook and Richard Hoad

13:30 – 13:50	**53**	**High Power Microwave Effects on Coated Window Panes** *P. Ängskog, M. Bäckström, B. Vallhagen*
13:50 – 14:10	**169**	**Reflection and transmission of microwaves by a modern glass window** *P. Ragulis, Ž. Kancleris, R. Simniškis, M. Dagys*
14:10 – 14:30	**150**	**A Method to Design a New Kind Active Frequency Selective Surface which has the Ability of HPM Protection** *Deng Feng, Wang Dongdong, Ding Fan*
14:30 – 14:50	**130**	**GPS Radomes for High-Power Electromagnetic Radiation Protection Using Frequency Selective Surface Structure** *Soon-Soo Oh, Min-Sang Jang, Seung-Hun Choi, Dong-Wong Jang, Jeong-Hee Jin*

Friday August 7, 2015

Interactive Forum for Technical Exchange with HPEM Industry

(09:00 – 12:00)

SAMDA HALL IN JEJU ICC

Company	Presenter	Title
Metatech	William Radasky	Metatech Capabilities in HPEM and the Needs for Protection Devices in the Near Future
OMNI LPS	Youngki Chung	EMP Protection Measures for Nuclear Power Plant in Lightning Protection Expert Position
Korea Electromagnetic Research	Jongho Kim	Introduction of Company
ETS	Sergio N. Longoria	Technical Consideration for Sucessful EMP Mitigation of TEMPEST facilities with Power Filters
Montena	Francois Volery	NEMP Testing Methods: how to efficiently test the immunity of electronic equipment, from small PCBs up to a very large systems

The Sponsors and the Exhibitors

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http://www.metatechcorp.com/

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ASIA ELECTROMAGNETICS SYMPOSIUM (ASIAEM) 2015

3-8 August 2015
Jeju, Republic of Korea

The first ASIAEM symposium will be held in Jeju island, Republic of Korea. ASIAEM 2015 will continue the AMEREM/EUROEM tradition of bringing together the:

- 20th High-Power Electromagnetics Conference (HPEM 20)
- 13th Ultra-Wideband, Short-Pulse Electromagnetics Conference(UWB SP 13)
- 13th Unexploded Ordnance Detection and Range Remediation Conference (UXO 13)

It's our great pleasure to invite you to join us for ASIAEM 2015 Symposium. It provides a forum within the international scientific and engineering community in High-Power Electromagnetics. The conferences in Asia will be held biennially (odd-numbered years).

Internationally renowned experts from many countries will await you in Jeju. We are looking forward to seeing you in the beautiful island of Jeju.

AWARDS

Both Outstanding Young Investigator Award and Student Best Paper Award will be established to encourage both outstanding young investigators and students to make great contributions in the field of High-Power Electromagnetics.

IMPORTANT DATES

Proposals for Special Sessions	20th January 2015
Paper submission	22nd March 2015
Notification of Acceptance	22nd April 2015
Deadline for Author Registration	06th June 2015

CONFERENCE EMAIL

asiaem2015@mail.xjtu.edu.cn

ORGANIZERS

Xi'an Jiaotong University, China

Inha University, Republic of Korea

For more information bout ASIAEM2015, please visit conference website of http://www.asiaem.org or http://asiaem2015.xjtu.edu.cn.

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ASIA ELECTROMAGNETICS SYMPOSIUM (ASIAEM) 2015

3-8 August 2015
Jeju, Republic of Korea

SCOPE

General technical areas for ASIAEM 2015 are: *High-Power Electromagnetics (HPEM), Ultra Wideband (UWB) and Unexploded Ordnance (UXO).* Under these main headings, the Technical Program for ASIAEM 2015 is organized into 13 Technical Committees (TCs), as shown below.

Technical Committee	Broad Area	Description
TC 1	HPEM	Sources, Antennas and Facilities (both wideband and narrowband)
TC 2	HPEM	Applications of Coupling to Structures and Cables
TC 3	HPEM	Measurement Techniques
TC 4	HPEM	IEMI Threats, Effects and Protection
TC 5	HPEM	System-level Protection and Testing
TC 6	HPEM	Lightning EM Effects
TC 7	HPEM	Numerical Models and Modeling
TC 8	HPEM	Bio-effects and Medical Applications of EM Fields
TC 9	UWB	Antenna Design, Radiation and Propagation
TC 10	UWB	Radar Systems (Signal Processing and Security) Aspects
TC 11	UWB	Target Detection, Discrimination and Imaging
TC 12	UXO	Landmine and IED Detection and Neutralization
TC 13	HPEM	Electromagnetic Transients in UHV/EHV Transmission Lines and Substations

SPECIAL SESSIONS

In addition to the 13 TCs identified above, we plan to organize Special Sessions on topics of current interest. You are welcome to submit your proposals to organize special sessions to the Technical Program Committee.

Four such Special Sessions have already been proposed.

SS01	Design and Testing of Protective Devices and Test Methods
SS02	Evaluation of HEMP Impacts on Critical Infrastructure
SS03	Explosive Devices Effects and Protection for HPEM
SS04	Protection of the Critical Infrastructures from IEMI

GENERAL INFORMATION

The conference will be organized by the State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University in China and Inha University in Republic of Korea. The working language of the conference is English. There will be a technical exhibition during the conference. Gala banquet and cocktail/welcome reception are being planned.

CONFERENCE LOCATION

Jeju Island is a temperate volcanic isle which lies about 120 km off the southern coast of the South Korean mainland. Jeju Island has also been called the "Hawaii of Korea" due to its temperate climate. It is also a tourist resort in Korea, including Jongbang Waterfall, Ancient Lava Estuary, Sunrise Peak, Sopjikoji, Folk Village, etc.

PAPER SUBMISSION

All paper submissions should follow the A4 size Two-Column Format. Each submission will be reviewed by a team of reviewers and can have 1-3 pages containing sufficient information to allow the International Scientific Committee to evaluate their contributions.

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