

Commission E (Electromagnetic Noise and Interference) Activity Report

October 2011 - October 2012

Domestic academic activities:

1. Commission E had 11 regular technical meetings and one “Young Scientists Meeting” in the period of October 2011 to October 2012 in corporation with the Technical Committee on Electromagnetic Compatibility (EMCJ) of the Institute of Electronics, Information and Communication Engineers (IEICE), comprising 162 presentations in total. Three of the meetings, Dec. 2011, June and Dec. 2012, were co-sponsored by the Technical Committee on EMC of the Institute of Electrical Engineers of Japan (IEEJ TC-EMC). Selected special topics for the monthly meetings were EMC issues related to Discharge, Transmission line, Power electronics, Biomedical, Communication, Broadcasting, Simulation technology, etc.

(<http://www.ieice.org/ken/program/index.php?instsoc=IEICE-B&tgid=IEICE-EMCJ>)

At the regular monthly meetings, the following 10 “Special Talks” were presented;

- (1) Prof. Takeo Yoshino, "Reflection Properties of the Surface of Antarctic Ice Cap "
- (2) Prof. Osamu Fujiwara, "Speculating about Studies on Bioelectromagnetic from EMC Standpoint"
- (3) Prof. Masahito Shoyama, "Noise Reduction Techniques in Power Electronics Circuits"
- (4) Prof. Hiroshi Inoue, "Research on EMC Problem around PCB and Electrical Contact"
- (5) Prof. Isamu Nagano, "EMC and EMI technologies for wave measurements by rockets and satellites"
- (6) Prof. Nobuo Kuwabara, "Application of Optical Fiber Telecommunication Technology to EMC Measurement"
- (7) Prof. Tomoo Ushio, "Lightning and Thunderstorm Observation with High Resolution"
- (8) Prof. Jianqing Wang, "Study on Exposure System for Biological Effect Test of Radio Wave"
- (9) Prof. Toshio Nojima, "A comprehensive overview of the RF-EMC in the echoic living environment"
- (10) Prof. Kunio Sawaya, "Radiation Mechanism and Visualization of Electromagnetic Wave"

To commemorate the founder of EMCJ technical group Emeritus Professor Risaburo Sato, who passed away on 12 April 2011, a Memorial Symposium was held in Sendai on 28 Oct. 2011 and three memorial speeches were given.

(<http://www.ieice.org/~emcj/jpn/events/drsato/20111028drsatosympo-j.html>)

2. The Technical Committee on EMC of the Institute of Electrical Engineers of Japan (IEEJ TC-EMC) had four technical meetings in a year, including three co-sponsored by EMCJ, and now operating four ad hoc Investigating R&D Committees, viz. (1) on guidelines for biological protection from EM fields and its EMC evaluation, (2) on EM analysis technologies including those on biological tissues, (3) on EM noise characteristics associated with discharge, and (4) on EMC related to Smart Grid. A new ad hoc technical committee on electric system security was founded in March 2012. <http://www1a.comm.eng.osaka-u.ac.jp/IEEJ-TC-EMC/>

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3. Japan Institute of Electronics Packaging (JIEP) includes three groups on EMC, viz., EMC modeling, Ultra-high speed electronics packaging, and low noise packaging under the Technical Committee on Electromagnetic Characteristics (TC-EM).

<http://www.e-jisso.jp/society/kenkyukai/electromagnetic/index.html>

International Conferences and Meetings:

1. “2012 Korea-Japan Joint Conference EMT/EMC/BE (KJJC2012)” was held on May 18-19, 2012 at Yonsei University in Seoul, Korea. This seventh Joint Conference was sponsored and organized jointly by the Korean Institute of Electromagnetic Engineering & Science (KIEES) and IEICE, and intended to provide an academic forum for the exchange of information on the progress of research and development in Electromagnetic Theory (EMT), Electromagnetic Compatibility (EMC), and Biological Effect (BE) by EMF including Biomedical Electromagnetics. (<http://www.kiees.or.kr/kjic2012/>)
2. The following conferences and meetings related to EMC were held;
 - The 8th International Workshop on Electromagnetic Compatibility of Integrated Circuits (EMC Compo 11), Nov. 6-9, 2011, Dubrovnik, Croatia.
 - 2012 Asia-Pacific EMC Symposium (APEMC 2012): May. 21-24, 2012, Singapore.
 - 2012 IEEE International Symposium on Electromagnetic Compatibility (EMC 2012), Aug. 5-10, 2012, Pittsburgh, Pennsylvania, USA.
 - EMC Europe 2012, Sep. 17-21, 2012, Rome, Italy.

Future International Conferences and Meetings:

1. “The 6th Asia-Pacific Conference on Environmental Electromagnetics (CEEM'2012)”: Nov 6-9, 2012, Shanghai, China.
2. “2012 Pan-Pacific EMC Joint Meeting (PPEMC'12)”: Nov 29-30, 2012, NICT, Tokyo.
3. “2013 IEEE Electrical Design of Advanced Packaging & Systems Symposium (EDAPS 2103), Dec. 12-14 & 15, 2013, Nara, Japan. (<http://www.edaps2013.org/>)
4. “The 9th International Workshop on Electromagnetic Compatibility of Integrated Circuits (EMC Compo 13)”, Dec. 15-18, 2013, Nara, Japan. (<http://www.edaps2013.org/>)
5. “2014 International Symposium on Electromagnetic Compatibility, Tokyo (EMC'14/Tokyo)”. It is a symposium of periodically held every five years in Japan. This will be held in May 13-16, 2014 in Tokyo. More than 450 audiences and 200 presentations are expected. Scopes are;
 - 1) EMC Measurements,
 - 2) High Power & High Voltage EMC: Lightning & Overvoltage Protection, Intentional EMI & EMP, Grounding Phenomena in Power Systems,
 - 3) EMC Management & Standards,
 - 4) Chip, Package, PCB & Cables, Semiconductor EMC,
 - 5) Immunity / Susceptibility, ESD and Transients,
 - 6) Shielding, Grounding & Materials, EM Absorber, Meta-materials,
 - 7) Numerical Modeling: Computational Electromagnetics,
 - 8) Biological Effects, EMF Safety & EMC in Medical Applications & Safety:
 - 9) Power System EMC: Smart Grids, Power Quality Issues, EMC in Power Plants & Substations, Solar Power Systems, Wireless Power Transmission,
 - 10) Power Electronics & Vehicles: Automotive EMC, Railway and Naval EMC, EMC in Space,
 - 11) Communication System EMC: Wired & Wireless Communications, Antennas, Propagation and Scattering.

<http://www.ieice.org/~emc14/>