

## Commission E (Electromagnetic Noise and Interference) Activity Report

April 2015 - July 2015

### Domestic academic activities:

The Technical Committee on Electromagnetic Compatibility (EMCJ) of the Institute of Electronics, Information and Communication Engineers (IEICE) had five regular technical meetings in the period of April to July 2015, where 48 regular reports, two special talks and three invited talks were presented. The total number of presentations is 53. The meeting in June was held at Bangkok, Thailand, which is described in the next section (International Workshop).

The featuring technical topic of the April meeting was “Biomedical EMC”, and a special talk (1), listed below, was presented. The special talk (2) was in the May meeting, and (3) was in the 2-nd July meeting, the featuring technical topic of which was “Discharge, Electronic Packaging, EMC”. The first regular meeting in July was held as the annual “EMCJ Young Researchers’ Presentation Meeting” which is co-sponsored by the Technical Committee on Electromagnetic Characteristics (TC-EM) of Japan Institute of Electronics Packaging (JIEP), and 13 reports were presented.

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

( <http://www.ieice.org/cs/emcj/jpn/events/wakate/> )

[Special Talks] presented in April, May and July EMCJ meetings;

- (1) Dr. Kenichi Yamazaki (CRIEPI), "Recent topics on assessment of human exposure to intermediate frequency electromagnetic fields".
- (2) Prof. Liuji Koga (EM Consulting), "Organization and Activities of IEEE and IEEE-EMCS".
- (3) Dr. Takeshi Aoki (TANAKA holdings, former), "Required for Investigation on Functional Safety (1) - Outline -".

### International Workshop:

The EMCJ regular technical meeting on June 24 to 26 was held as the EMC Joint Workshop 2015 Bangkok (EMCJ WS 2015, Bangkok), which is the first international technical workshop held outside of Japan as one of internationalization activities organized by Technical Committee on Electromagnetic Compatibility (TC-EMCJ), in cooperation with Technical Meeting on Electromagnetic Compatibility of IEEJ (IEE-EMC) and Technical Meeting on Magnetics of IEEJ (IEE-MAG). (<http://www.ieice.org/cs/emcj/jpn/regular/emcj-ws.html>) The workshop was held at King Mongkut's Institute of Technology Ladkrabang (KMITL) in Bangkok, Thailand, hosted and supported by Assoc. Prof. Werachet Khan-ngern and Electrical Engineering Department, KMITL. We had 3 invited and 10 regular talks in 5 oral sessions, and 5 technical presentations in 1 poster session. Also, 5 papers of them were presented by graduate students. We had fruitful discussions and the workshop was really successful. The next international workshop is now been arranged to be held in Taiwan in mid 2015.

## International Symposium:

"Asia-Pacific International Symposium on Electromagnetic Compatibility (APEMC 2015)", was held at Taipei, Taiwan on May 26-29, 2015. (<http://www.apemc2015.org/>). 198 papers were presented; 74 (37.4%) papers were from Taiwan, 31 (15.7%) were from Japan, 28 (14.1%) from China, 14 (7.1%) from France, and 10 (5.1%) from Korea. The technical areas and topics with the numbers of papers are listed below. From Europe 30 papers were presented. Particularly papers on "Integrated Circuit EMC", "Electronic Packaging EMC", "Signal Integrity and Power Integrity", "Transient EMC" including ESD (electrostatic discharge) issues were attracting attentions. There also was a tutorial on "ESD Protection Designs for Circuits and Systems". This technical feature is probably due to that the semiconductor industries pay attention to Taiwan, and the importance of EMC issues on semiconductor and package design has become understood widely.

The next APEMC will be held on May 18-21, 2016, in Shenzhen, and the 2017 APEMC will be in Korea.

Topic	papers	Topic	papers
Aerospace EMC	6	Integrated Circuit EMC	18
Antennas and Wave Propagation	22	Power System EMC and Smart Grid	1
Biomedical Electromagnetics	11	Signal Integrity and Power Integrity	38
Computational Electromagnetics	12	System Level EMC and Protection	7
Electromagnetic Environment	2	Transient EMC	20
Electronic Packaging EMC	6	Transportation EMC	12
EMC in Nanotechnology and Advanced Materials	1	Wireless Communication EMC	5
EMC Measurement and Instrumentation	21	Wireless Power Transfer	2
EMC Standard and Management	2	Others	12
		Total	198

## Future International Conferences and Meetings:

1. "Joint IEEE EMC & EMC Europe 2015 (EMC 2015)", Aug. 16-22, 2015. Dresden, Germany (<http://conference.vde.com/emc2015>).
2. "7th Asia-Pacific Conference on Environmental Electromagnetics (CEEM)", November 4-7, 2015. Hangzhou, China. (<http://www.ceem2015.org/>) Preliminary Paper Submission Deadline: July 31, 2015; Notification of Acceptance: August 31, 2015.; Camera-Ready Manuscript Deadline: September 15, 2015
3. "The 10th International Workshop on Electromagnetic Compatibility of Integrated Circuits (EMC Compo 2015)", November 10-13, 2013, Edinburgh, Scotland, United Kingdom.
4. "Korea-Japan EMT/EMC/BE Joint Conference (KJJC-2015)", November 23-24, Sendai International Center, Japan. ( <http://www.ieice.org/cs/emcj/kjic2015/> ) Application of subject: July 31, 2015; Deadline for paper submission: October 10, 2015; Registration opens: October 1, 2015; Deadline for Registration: October 16, 2015.