

Commission E (Electromagnetic Noise and Interference) Activity Report

December 2014 - March 2015

Domestic academic activities:

The Technical Committee on Electromagnetic Compatibility (EMCJ) of the Institute of Electronics, Information and Communication Engineers (IEICE) had three regular technical meetings in December 2014, January and March 2015 where 49 regular reports and three special talks were presented. The December meeting was co-sponsored by the Technical Committee on EMC of the Institute of Electrical Engineers of Japan (IEEEJ-EMC) with the featuring technical topics "Power electronics, EMC", where nine reports were from EMCJ and five presentations were from IEEEJ-EMC. The January meeting was held in two days and co-sponsored by the Technical Committee on Wireless Power Transfer (WPT). The featuring technical topics were "Communication, Wireless Power Transmission, and EMC" and nine regular reports and a special talk were organized by WPT with 18 reports from EMCJ. In the March meeting eight regular reports and one special talk were presented.

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

In conjunction with progress of power electronics devices and their application to automotive application such as electric vehicles (EV) and EV charging systems including WPT, it is essential to control electromagnetic disturbances generated by these systems to maintain electromagnetic environment and proper functionality of electronic systems. Applications of power electronics to commercial power supply sources such as grid connected power converters (GCPCs) applied to solar-photovoltaic (PV) power generating systems also generate EMC problems. Collaboration between power electronics engineers and EMC engineers is strongly expected.

[Special Talks] presented in December 2014, January and March 2015 meetings;

- (1) Prof. Hideki Asai (Shizuoka Univ.), "SI/PI/EMI Simulation Techniques and Their Exploitation for Chip/Package/Board/Chassis Co-design - Multi-domain Simulation -"
- (2) Dr. Hiroki Shoki (Toshiba), "Trends and Activities for Commercialization of Wireless Power Transfer Technologies - Regulation Establishment, International Collaboration and Standardization -"
- (3) Dr. Fujio Amemiya (NTT AT), "Outline of the progress relating to establishment and revision of EMC standards for Information Technology Equipment"

In March the IEICE General Conference 2015 was held at Ritsumeikan University, and 65 reports in regular sessions on EMC and six invited presentations in an organized session were presented. The topic of the organized session was "Grounding and Earthing in Communication and Power Systems in Relation to EMC Problems". Intensive discussion was held between researchers dealing with high voltage electrical facilities and high frequency communication facilities. The interesting discussion was extended through lightning protection and electric safety to radio communication and digital electronics equipment.

Another domestic conference was taken place under the Japan Institute of Electronic Packaging (JIEP) in March, and 18 reports were presented in the sessions organized by the Technical Committee on Electromagnetic Characteristics (TC-EM) in conjunction with the Technical Committee on Circuit Design and Jisso Technology.

Future International Conferences and Meetings:

1. "19th IEEE Workshop on Signal and Power Integrity (SPI 2015)", May 10-13, Berlin, Germany, (<http://www.spi2015.org/>).
2. "Asia-Pacific International Symposium on Electromagnetic Compatibility (APEMC 2015)", May 26-29, 2015, Taipei, Taiwan. (<http://www.apemc2015.org/>).
3. "Joint IEEE EMC & EMC Europe 2015 (EMC 2015)", Aug. 16-22, 2015. Dresden, Germany (<http://conference.vde.com/emc2015>).
4. "The 10th International Workshop on Electromagnetic Compatibility of Integrated Circuits (EMC Compo 2015)", November 10-13, 2015, Edinburgh, Scotland, United Kingdom; EMC Compo 2015 coincides with the **150th Anniversary of the publication of Maxwell's Equations**. In partnership with the James Clerk Maxwell Foundation, there will be an opportunity to visit James Clerk Maxwell's birthplace in Edinburgh's picturesque New Town. (<http://www.emccompo2015.org/>); Paper Submission: 11th May 2015, Proposals for Workshops, Tutorials and Special Sessions: 30th May 2015, Notification of Acceptance: 13th July 2015, Submission of Final Paper: 22 Sept 2015.
5. "Korea-Japan EMT/EMC/BE Joint Conference (2015 KJJC)", November 23-24, Sendai International Center, Japan. CFP will soon be ready.