

## Activity Report of Commission E, July, 2011

(Electromagnetic Noise and Interference)

Term from March to June 2011

EMI control technologies are still of prime interest of high-speed electronic device supplier. Engineers who design electronic apparatuses are always more effective, more versatile method of EMI control. Research activities are held in many farms, but results are apt to be closed to the farm. EMC researches are held in a few universities out of more than 100 Universities that have engineering department.

Automobiles as well as consumer electronics are commodities to be exported in order to support Japanese people. These days the electric vehicles are expected as a resolution for the global green-house effect, in which radio receivers must work with 30-100kW driving electric system. The EMC problems in automotives are problems of today and tomorrow in Japan. Thus EMC technologies to suppress noise are fundamental technologies that assure the existence of the country.

The problem of noise emission from the power-line communication (PLC) system is still kept conducted. According to the development of contingent power transmission through electro-magnetic device, measurement and biological effect of magnetic field in low frequency have been studied and have come to be reported.

Academic activities:

1. Commission E had, in the period of March 2011 to June 2011, 4 technical meetings in corporation with the Technical Committee on Electromagnetic Compatibility (EMCJ) of the Institute of Electronics, Information and Communication Engineers, comprising 57 presentations in total. Subjects reported there are predominated by controlling signal transmission along lines on printed circuit boards. Radio noise radiation from a transmission line which is actually not balanced though nominally is. This subject relates both to the EM noise radiation from digital devices as well as to power line communication (PLC). A tutorial activity was achieved by EMCJ in April, where know-how and principle of network-analyzers were told.
2. A Technical Committee on EMC inside The Institute of Electrical Engineers of Japan had four meetings in a year and operating four ad hoc studying groups, viz. EMC, EM wave and Information security, Noise-immunity of electrical and electronic devices, and EMC of ESD.
3. Japan Institute of Electronics Packaging includes three groups on EMC, viz., EMC modeling, Ultra-high speed electronics packaging, and low noise packaging.

Commission E

4. International meeting, “APMC: 2011 Asia-Pacific EMC symposium” was held in May 16-19, at Ramada Plaza Jeju Hotel, Jeju Island, Korea. More than 300 Engineers and Scientists attended to exchange their knowledge as well as appreciated great scenery of Jeju Island.
  
5. Many academic activities were cancelled because of the big earthquake arose in north-east area of Japan. People who had already registered to them could not attend. Some are directly suffered from it, or could not travel because of damages in traffic facilities. Buildings of universities are broken and engineers were very busy to re-construct their production lines, which did not afford them to attend meetings.