

Commission D (Electronics and Photonics) Activity Report

August 2015-November 2015

December 28, 2015

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1. Commission Activities

URSI-JRSM 2015: The invited talk proposed by Commission D of Japan was held as following:

“Multi-port Power Router and Its Impact on Internet of Energy,” by Prof. Yuichi Kado (Graduate School of Science and Technology, Kyoto Institute of Technology).

2. Domestic activities related to areas covered by Commission D

IEICE Society Conference: Following technical meeting was held in the session of Microwave Photonics (C-14) at the IEICE society conference: September 8-11, 2015 (Sendai); 25 papers were presented, which cover photonic generation of THz wave, several ten Gigabit THz transmission devices and system, photonic array antenna, electronic and photonic devices for microwave, MMW, THz wave photonics applications.

Technical Committee on Microwave Photonics (IEICE): Following technical meeting was held on specific subjects including regular contributions, November 27, 2015 (Tokyo); Two Special Lectures: Surveillance Systems for Air Traffic Control as RoF Application, Millimeter-Wave Wireless Backhaul for High-Speed Rail using Radio over Fiber Technique, and 6 contributed paper related MMW and THz wave photonics devices and systems. The committee chair was Prof. Yuichi Kado (Graduate School of Science and Technology, Kyoto Institute of Technology), who is a member on Japan Commission D.

3. International activities related to areas covered by Commission D

2015 International Topical Meeting on Microwave Photonics (MWP 2015):

The conference was held on October 26-29, 2015 in Cyprus. Plenary speeches were on Introduction to the Largest Aperture Spherical Telescope in the World, Integrated Microwave Photonics, Recent progress in photonic ADC and its application to antenna systems, and Coordinated Role of Optical and Radio Network in 5G-era. “THz Wireless Communications” was presented as a plenary talk by Prof. Tadao Nagatsuma, Osaka Univ. who is a member on Japan Commission D. Various topics covered by Commission D were discussed including MWP integrated devices, MWP sensing technologies, THz technologies, High-speed photo detector & Optical modulator, and RoF for mobile communication systems.

41st European Conference on Optical Communication (ECOC 2015):

The conference was held on September 27 - October 1, 2015 in Valencia, Spain. ECOC is the leading forum in Europe for keeping up with the top research advances and scientific discoveries in the field of optical communications and related photonic technologies. The technology trends of resilient network, and wired and wireless conversion in ECOC2015, and was able to contribute to the project planning of the next generation access network. Prof. Otsuji, Tohoku Univ., Commission D member, attended and presented his latest work entitled with " Sub-THz Photonic Frequency Conversion Using Graphene and InP-Based Transistors for Future Fully Coherent Access Network (Paper No. Mo.3.4.2),” and demonstrated a single transistor can photomix the optical subcarriers to generate LO and mix down the RF data on the sub-THz carrier to the IF band.