RECENT RESEARCH ACTIVITIES

Standardization and Scientific Society Activities for Wireless Power Transfer, Solar Power Satellite/Station, and Microwave Processing

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We introduce established industrial consortiums and scientific society to promote our technologies of a wireless power transfer (WPT), Solar Power Satellite/Station (SP), and microwave processing.

WiPoT (Wireless Power Transfer Consortium for Practical Applications)[1] was established by Prof. Shinohara as the first chair with 22 companies and 24 university's members on April, 2013.In the end of FY2014, number of companies member is 29 and number of university's member is 38. We mainly discuss to promote a WPT via microwaves. On August, 2014, we invited an engineer of PowerCAST company, which produce an receiver of a wireless power in US, and discuss a future collaboration. The WiPoT collaborates with European WPT consortium named WIPE (Wireless Power Transmission for Sustainable Electronics).

WPMc (Wireless Power Management Consortium) was also established by Prof. Shinohara as a chair and Dr. Hosotani of Murata Corporation as the first vice chair in 2013. The WPMc promotes a direct current resonance coupling WPT technology with 36 company members.

KID-S(Kaiyo Inverse Dam Society) was established by Prof. Ishikawa as a chair in 2013 to promote an inverse dam on marine for renewable energy and SPS with 11 companies. The KID-S is a general incorporated association.

Laboratory members work hard for international and domestic scientific society. In Microwave Theory and Technique Society of IEEE (The Institute of Electrical and Electronics Engineers, Inc., USA), new international conference of wireless power transfer (WPTc) was established. In 2014, the 2nd WPTc was held in Jeju Island, Korea, and Prof. Shinohara works for the WPTc as a founder of the conference and member of advisory committee. Number of attendees was approximately 200. Prof. Shinohara works for international journal of the WPT in Cambridge Press, England as one of executive editors[4].

Dr. Mitani and Prof. Shinohara works as board members on Japan Society of Electromagnetic Wave Energy Applications (JEMEA)[5] to promote microwave processing and microwave chemical science. They also belong to No. 188 committee (Reactive Field Excited by Electromagnetic Waves)[6] at JSPS (Japan Society for the Promotion of Science) which was established in 2014.

The Space Solar Power Systems (SSPS) Society was established in 2014[7] and Prof. Shinohara is one of its board members. The SSPS Society aims to promote the SPS in Japan.

Prof. Miyakoshi is a membership committee chair of Bioelectromagnetics Society (BEMS) (USA), a working group member of World Health Organization (WHO) - International Agency for Research on Cancer (IARC), WHO-EMF Project-Task Group Member, and SCII Member of International Commission on Non-Ionizing Radiation Protection (ICNIRP). He also works for 'new regional research' with Dr. Koyama in RISH.

Our hope is a sustainable humanosphere with such new technologies with international collaborations.

References

[1] WiPoT http://www.wipot.jp/english/
[2] WPMc http://wpm-c.com/ (in Japanese)
[3] KID-S http://kid-s.jpn.com/enterprise/ (in Japanese)
[4] Journal of WPT http://journals.cambridge.org/action/displayJournal?jid=wpt
[5] JEMEA http://www.jemea.org/?ml_lang=en
[6] No.188 committee of JSPS https://www.jsps.go.jp/j-soc/list/188.html (in Japanese)
[7] SSPS society http://www.sspss.jp/ (in Japanese)