

Commission K (Electromagnetics in Biology & Medicine) Activity Report
October 2020 – July 2021

July 30, 2021

Soichi Watanabe

1 Core members of the Japanese URSI-Commission K for the 25th term of the Science Council of Japan

Chair: Soichi Watanabe (National Institute of Information and Communications Technology)

Vice chair: Satoshi Nakasono (Central Research Institute of Electric Power Industry)

Secretaries: Kazuyuki Saito (Chiba University), Masaki Sekino (The University of Tokyo), Tomoaki Nagaoka (National Institute of Information and Communications Technology), Sachiko Yoshie (Railway Technical Research Institute), Ikuyo Miwa (National Institute of Information and Communications Technology), Atsushi Saito (Central Research Institute of Electric Power Industry)

2 Activities

Preparatory meeting for the Japanese URSI-Commission K for the 25th term of the Science Council of Japan

Date: January 13, 2021

Place: Online

- Topics:
- 1) Allocation of roles between core members.
 - 2) Prospectus for the next Japanese URSI-Commission K.
 - 3) List of members of the next Japanese URSI-Commission K.
 - 4) Planning the next scientific symposium.
 - 5) URSI GASS 2021 at Rome.
 - 6) Hosting the 2022 Annual Meeting of BioEM in Japan.

1st Meeting of the Japanese URSI-Commission K for the 25th term of the Science Council of Japan

Date: April 22, 2021

Place: Online

- Topics:
- 1) Result of election of the commission chair.
 - 2) Self introductions of the commission members.
 - 3) Finalizing the minute by the commission chair.
 - 4) Objectives and operation policy of the commission.

- 5) Information on the Japan National Committee of URSI.
- 6) URSI GASS 2021 and flagship meetings.
- 7) Hosting the 2022 Annual Meeting of BioEM in Japan.
- 8) Associated conferences.

Scientific symposium (Co-operated by Japanese Society for Electromagnetics in Biology and Medicine)

Date: April 22, 2021

Place: Online

Number of participants: 38

Six oral presentations and one special lecture were given to the participants.

- 1) “Development of a phantom for detecting the human body at 5.7 GHz” by K. Sato et al. (Chiba University)
 - 2) “Fundamental studies on phantoms for modeling the skin tissues at terahertz bands” by T. Tomizawa et al. (Aoyama Gakuin University)
 - 3) “Estimation of frequency dependence of the increased specific absorption rate associated with implanted mandibular plate with screw holes” by A. Ohtsuka et al. (Hokkaido University)
 - 4) “Measurement of exposure to electromagnetic waves at broadcast band” by K. Tobita et al. (National Institute of Information and Communications Technology)
 - 5) “Adaptive time domain average stochastic resonance method for magnetocardiographic detection at room temperature” by Z. Liao (The University of Tokyo)
 - 6) “Imaging dielectric properties of biological tissues using MRI” by M. Fushimi (The University of Tokyo)
- Special Lecture) Wide band body area communication for wearable and implant robot control by J. Wang (Nagoya Institute of Technology)

Core member meeting of the Japanese Commission K

Date: October 2, 2020, February 25, June 21, 2021,

Place: Online

Topic: Hosting the 2022 Annual Meeting of BioEM in Japan.

Hosting the 2022 Annual Meeting of BioEM in Japan

BioEM is the world's largest and most highly recognized bioelectromagnetics conference attracting academic and industrial participants at all career stages from all over the world. The core members of Japanese Commission K are preparing to host the BioEM 2022 in Nagoya.

<https://www.bioem2022.org/>

3 Awards

Young Scientist Award at URSI GASS 2021

- Dr. Sen Liu (National Institute of Information and Communications Technology) won the Young Scientist Award for his paper entitled “Incident power density assessment of smart surfaces for exposure compliance.”

A young research excellent presentation award at the Scientific Symposium of the Japanese Society for Electromagnetics in Biology and Medicine

- Dr. Motofumi Fushimi (The University of Tokyo) won the young research excellent presentation award for his presentation entitled “Imaging dielectric properties of biological tissues using MRI.”

4 Associated meetings

4.1 Past meeting

1. BioEM, Oxford, UK, 21 - 26 June 2020, canceled < <https://www.bioem2020.org/> >

4.2 Future meetings

1. BioEM, Ghent, Belgium, 26 September - 1 October 2021, < <https://www.bioem2021.org/> >
2. URSI GASS, Rome, Italy, 28 August - 4 September 2021, < <http://www.ursi2021.org/> >