2015.6.10
23rd URSI-C Chair
Nobuyoshi Kikuma

Activity Report of URSI-C Committee

- The 4th scientific workshop of the 23rd URSI-C in Japan -

1. Session title: "An attempt to discover things by studying the past of wireless power transfer"

2. Convener: Dr. Takashi Hikage, Hokkaido University

3. Date/time: 12:00 - 16:00, December 4th, 2015

4. Venue: Kyoto University Tokyo Office (Minato-ku, Tokyo)

5. Registration fee: Free

6. Listed attendees: 48 persons

7. Local arrangement: Prof. Naoki Shinohara (Kyoto University)

8. Presentation:

•12:00 - 12:05	Opening Remarks, Prof. Nobuyoshi Kikuma, Chair, Commission C of URSI-JNC (Nagoya Institute of Technology)
•12:05 - 12:45	"WPT-Efficiency and Power", Prof. Hidetoshi Matsuki (Tohoku University)
•12:45 - 13:25	"The story from Inductive Power Transfer to Induct Power Supply", Prof. Shunsuke Takahashi (Waseda University)
•13:25 - 14:05	"History of my antenna research", Prof. Kiyohiko Itoh (Professor Emeritus Hokkaido University)
•14:05 - 14:20	Coffee Break

- •14:20 - 15:00 "An old tale of demonstration experiments using microwave power transmission", Prof. Yoshiyuki Fujino (Toyo University)
- •15:00 - 16:00 Keynote "URSI, Radio Science and Solar Power Satellite", Prof. Hiroshi Matsumoto (President of RIKEN, Professor Emeritus Kyoto University)

9. Reception: Shinagawa Intercity, Minato-ku, Tokyo

10. The steering committee meeting took place from 11:00 to 111:30 on December 4th, 2015.

11. Concluding Remarks

This is the fourth workshop organized by the 23rd URSI-C in Japan. This workshop focused on the past researches of wireless power transfer technology. Four renowned leading professors gave their interesting presentations in terms of precious topics of past researches and developments of the wireless power transfer and their applications as well as the current industrial trends and prospects based on the past researches. In addition, Prof. Matsumoto (President of RIKEN, Professor Emeritus Kyoto Univ.) gave a keynote presentation regarding history of URSI, Radio Science researches in Kyoto University and Solar Power Satellite.

The topics presented here were impressive in URSI community, and gave us many inspirations and new insights. We also had valuable discussion on the cutting-edge technology and future trends of the wireless power transfer.

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Activity Report of URSI-C Committee

- The 5th scientific workshop of the 23rd URSI-C in Japan -

1. Session title: "Design Techniques for Low-Power and High-Performance Wireless Systems"

2. Convener: Dr. Ryuichi Fujimoto, Toshiba Corp.

3. Date/time: 14:00 - 17:00, March 14th, 2016

4. Venue: Karatsu Citizens Plaza (Karatsu city, Saga pref.)

5. Registration fee: Free

6. Listed attendees: 18 persons

7. Local arrangement: Dr. Ryuichi Fujimoto, Toshiba Corp.

8. Presentation:

•14:00 - 14:10	Opening Remarks, Prof. Nobuyoshi Kikuma, Chair, Commission C of URSI-JNC (Nagoya Institute of Technology)
•14:10 - 14:55	"Improvement of LC-resonator in high-frequency region and performance of VCO using improved LC-resonator", Prof. Nobuyui Ito (Okayama Prefectural University)
•14:55 - 15:40	"Low-power analog RF circuits and flexible devices for wireless BMI", Prof. Ippei Akita (Toyohashi University of Technology)
•15:40 - 16:00	Coffee Break

•16:00 - 16:45 "An Ultra-Low-Power Wireless Transceiver SoC for Medical Application", Dr. Shoichi Masui (Fujitsu Lab.)

9. Reception: Attendees 16 persons at Karatsu Royal Hotel, Higashi-Karatsu, Saga pref.

10. The steering committee meeting took place from 20:45 to 21:15 on March 14th, 2016.

11. Night session: "Low power design techniques for Bluetooth SMART SoCs", by Dr. Ryuichi Fujimoto (Toshiba Corp.) took place from 21:15 to 22:00 on March 14th, 2016.

12. Concluding Remarks

This is the 5th workshop organized by the 23rd URSI-C in Japan. Recently, The IoT or IoE has attracted considerable attention, and low-power wireless systems are researched for the IoT and IoE. This workshop focused on the design techniques for low-power and high-performance wireless systems.

The first presentation concerned performance improvements of LC-resonators for VCOs by Prof. Ito. Design optimization of variable capacitors and striped inductors were introduced. The second presentation concerned BMI and low-power wireless systems for BMI by Prof. Akita. Flexible devices for BMI application were also introduced. The final presentation concerned ultra low-power transceiver for medical applications by Dr. Masui. A wireless SoC was fabricated using 40-nm CMOS technology, and its power consumptions of the receiving and transmitting modes were 3.5mW and 3.0mW, respectively.

In the night session, low-power design techniques for Bluetooth SMART SoCs were presented by Dr. Fujimoto. Many frank discussions were deepened including future prospects of Japanese semiconductor industry and research.

The topics presented here were impressive in URSI community, and gave us many inspirations and new insights.