

# Program at a Glance

## Dec. 16, Friday

Room 104, Academic Exchange Center, Shahe Campus, University of Electronic Science and Technology of China

**08:00-10:00 Registration**

**10:00-10:20 Opening Ceremony,**

**10:20-11:30 Session FR1: Wireless Power Transfer based on Resonance Coupling #1,**

**11:30-13:20 Lunch Break**

Wan-you Restaurant, Shahe Campus, University of Electronic Science and Technology of China

**13:20-15:20 Session FR2: Wireless Power Transfer based on Resonance Coupling #2**

**15:20-15:40 Tea Break**

**15:40-17:40 Session FR3: Rectifier Design Technologies**

## Dec. 17, Saturday

Room 104, Academic Exchange Center, Shahe Campus, University of Electronic Science and Technology of China

**08:00-09:50 Session SA1: Design of Rectennas #1**

**09:50-10:10 Tea Break**

**10:10-11:50 Session SA2: Design of Rectennas #2**

**11:50-13:20 Lunch Break**

Wan-you Restaurant, Shahe Campus, University of Electronic Science and Technology of China

**13:20-15:00 Session SA3: Wireless Power Transfer based on Resonance Coupling #3**

**15:00-15:20 Tea Break**

**15:20-17:00 Session SA4: System-Level Design and EMC/EMI #1**

**18:00-20:00 Conference Dinner**

Wan-you Restaurant, Shahe Campus, University of Electronic Science and Technology of China

## Dec. 18, Sunday

Room 104, Academic Exchange Center, Shahe Campus, University of Electronic Science and Technology of China

**08:00-09:50 Session SU1: System-Level Design and EMC/EMI #2,**

**09:50-10:10 Tea Break**

**10:10-11:30 Session SU2: System-Level Design and EMC/EMI3**

**11:30-11:50 Student Paper Award Presentation**

**11:50-13:30 Lunch Break**

Wan-you Restaurant, Shahe Campus, University of Electronic Science and Technology of China

# Technical Program

**Dec. 16, Friday**

Room 104, Academic Exchange Center, Shahe Campus, University of Electronic Science and Technology of China

---

**Session FR1: Wireless Power Transfer based on Resonance Coupling #1**

*Session Chair: Prof. Xianqi Lin, University of Electronic Science and Technology of China, China*

**10:20-10:50 FR1-1**

**Development and Application of Wireless Power Transfer Technology (Special Presentation)**

Yue Sun (Chongqing University)

**10:50-11:10 FR1-2**

**6.78MHz WPT Charging Pad Design Considering Inductance Variation Due to Receiver Position**

Jonghyun Cho, Jun Xu, Jingdong Sun, Siming Pan, Yanling Lu, Yuanci Gao, Wensheng Gao, and Jun Fan (Missouri University of Science and Technology, Tsinghua Sichuan Energy Internet Research Institute, University of Electronic Science and Technology of China)

**11:10-11:30 FR1-3**

**A Planar Transmitting Array for Multi-Receiver Wireless Power Reception**

Zhu Liu and Zhizhang Chen (University of Electronic Science and Technology of China)

---

**11:30-13:20 Lunch Break**

Wan-you Restaurant, Shahe Campus, University of Electronic Science and Technology of China

---

**Session FR2: Wireless Power Transfer based on Resonance Coupling #2**

*Session Chair: Prof. Takashi Hikage, Hokkaido University, Japan*

**13:20-13:40 FR2-1**

**Flexible and Efficient 6.78MHz Wireless Charging for Metal-Cased Mobile Devices in Controlled Resonance Power Architecture**

Hengchun Mao, Bo Yang, Zeng Li, and Shi Song (Nuvoltatech)

**13:40-14:00 FR2-2**

**A High Efficiency Resonators of WPT with a Shielding Model**

Ye Yuan, Xianqi Lin, Wangmao Liu, Lijiang Li, Dongdong Xu, Liying Nie (University of Electronic Science and Technology of China)

**14:00-14:20 FR2-3**

**On a Transmission Characteristics of Open-type Double-layer Spiral Resonator for Wireless Power Transfer**

Ikuto Moriya, Hiroshi Hirayama (NITECH)

**14:20-14:40 FR2-4**

**Improvement of 85 KHz Self-resonant Open End Coil for Capacitor-less Wireless Power Transfer System**

Koichi Furusato, Takehiro, Imura, Yoichi Hori (The University of Tokyo)

**14:40-15:00 FR2-5**

**Circuit Analysis of Near-field WPT by S-parameters**

Zhenjun Lu, Manhong Zhu, Xiaotian Ma, Wei Zhuang, and Wanchun Tang (Jiangsu Center for Collaborative Innovation in Geographical Information Resource, Development and Application)

**15:00-15:20 FR2-6**

**Simplified Inductance Analysis for 3D Wireless Charging**

Jung-Ick Moon, Sang-Won Kim, Seong-Min Kim, In-Kui Cho (Electronics and Telecommunications Research Institute (ETRI))

**15:20-15:40 Tea Break**

**Session FR3: Rectifier Design Technologies**

*Session Chair: Prof. Xuexia Yang, Shanghai University, China*

**15:40-16:00 FR3-1**

**An Impedance Identification Method of a Diode on Operating State in a Single-Series and a Single-Shunt Type RF-DC Conversion Circuits**

Tsunayuki Yamamoto, Hiroshi Kubo, Toshiki Matoba (Yamaguchi University)

**16:00-16:20 FR3-2**

**Constant-Current Output LCC Wireless Power Transfer Circuit**

Yang Nan (Shanghai Institute of Space Power-Sources)

**16:20-16:40 FR3-3**

**A Single Diode Microwave Rectifier Using an Inductor for Harmonic Suppression (Special Presentation)**

Pengde Wu, Lei Zhang, Yingsheng Zhao and Changjun Liu (Sichuan University)

**16:40-17:00 FR3-4**

**GaN SBDs on Si Substrate for Microwave Power Rectification**

Jin-Ping Ao, Naoto Okada, Taofei Pu, Hiroko Itoh, and Yasuo Ohno (Tokushima University)

**17:00-17:20 FR3-5**

**Reflection Control in Microwave Rectenna Using Integrated GaN SBD Configuration**

Yasuo Ohno, Hiroko Itoh and Jin-Ping Ao (Laser Systems Inc)

**17:20-17:40 FR3-6**

**Efficiency Maximization of Wireless Power Transfer Systems with Two Modes of Half Active Rectifier Based on Primary Current Measurement**

Katsuhiro Hata, Takehiro Imura, and Yoichi Hori (University of Tokyo)

**Dec. 17, Saturday**

Room 104, Academic Exchange Center, Shahe Campus, University of Electronic Science and Technology of China

---

**Session SA1: Design of Rectennas #1**

*Session Chair: Qiaowei Yuan, National Institute of Technology, Sendai College, Japan*

**08:00-08:30 SA1-1**

**Rectenna Technology for WPT and Energy Harvesting (Special Presentation)**

Naoki Shinohara (Kyoto University)

**08:30-08:50 SA1-2**

**A Novel Design Method for Compact Rectenna**

Dongdong Xu, Xianqi Lin, Jiangjie Zeng, Wangmao Liu (University of Electronic Science and Technology of China)

**08:50-09:10 SA1-3**

**A Miniaturized C Band Large Power Rectenna**

An Yan, and Changjun Liu (Sichuan University)

**09:10-09:30 SA1-4**

**A Wide-Angle Polarization-Independent Metasurface for Electromagnetic Power Harvesting**

Xuanming Zhang and Long Li (Xidian University)

**09:30-09:50 SA1-5**

**Adaptive Polarization Switchable Rectenna Adjusted by Microwave Power**

Yu-Jen Chi, Yang-Han Lee, Qiaowei Yuan, Naoki Shinohara, and Qiang Chen (Tamkang University, Sendai National College of Technology, Kyoto University, Tohoku University)

**09:50-10:10 Tea Break**

**Session SA2: Design of Rectennas #2**

*Session Chair: Prof. Changjun Liu, Sichuan University, China*

**10:10-10:30 SA2-1**

**Polarization-Insensitive Metamaterial Surface for Harvesting Electromagnetic Energy with Triple-Band and Wide-Angle**

Xuexia Yang and Huiteng Zhong (Shanghai University)

**10:30-10:50 SA2-2**

**Photonic-applied Electromagnetic Measurement Technologies for Antenna Measurement and Electromagnetic Interference Measurement**

Satoru Kurokawa, Masanobu Hirose, Michitaka Ameya, Yuanfeng She (National Metrology Institute of Japan, National Institute of Advanced Industrial Science and Technology (AIST))

**10:50-11:10 SA2-3**

**A 2.4 GHz Circular Polarization Rectenna with Harmonic Suppression for Microwave Power Transmission**

Yanjie Cao, Weijun Hong, Li Deng, Shufang Li (Beijing University of Posts and Telecommunications)

**11:10-11:30 SA2-4**

**Design of A New Type 2.45-GHz patch array rectenna for Wireless Microwave Power Transmission**

Yilan Yang, Changjun Liu (Sichuan University)

**11:30-11:50 SA2-5**

**A Coming Wave Direction Detection System for Wireless Power Harvesting**

Xueguan Liu, Minjing Zhang, Huiping Guo, Ji Yan, Changrong Liu, Xinmi Yang, Minlai Zhou (Soochow University)

**11:50-13:20 Lunch Break**

Wan-you Restaurant, Shahe Campus, University of Electronic Science and Technology of China

**Session SA3: Wireless Power Transfer based on Resonance Coupling #3**

*Session Chair: Prof. Naoki Shinohara, Kyoto University, Japan*

**13:20-13:40 SA3-1**

**Characteristics of Wireless Power Transfer via Coupled Magnetic Resonances**

Li Yang, Dong Weihao, Yin Jianbin, Liu Liu, Zhang Cheng, Liu Zhe (Tianjin University of Technology)

**13:40-14:00 SA3-2**

**Impact of Cross-coupling and Reactance Compensation in Inductive Power Transfer with Arbitrary Number of Receivers**

Sugiyama Reona, Quang-Thang Duong and Minoru Okada (Nara Institute of Science and Technology)

**14:00-14:20 SA3-3**

**Maximum Power vs Maximum Efficiency of Wireless Power Transfer Systems**

Xin Dai (Chongqing University)

**14:20-14:40 SA3-4**

**Optimization of Cross Coupling Cancellation for Multiple-Receiver Wireless Power Transfer System at Changing-State**

Danyang Cui, Takehiro Imura, Yoichi Hori (University of Tokyo)

**14:40-15:00 SA3-5**

**Maximum Efficiency of the Transformer Based on S-parameters**

Qiaowei Yuan, Qiang Chen, Taku Sato (Sendai National College of Technology, Tohoku University)

**15:00-15:20 Tea Break**

**Session SA4: System-Level Design and EMC/EMI #1**

*Session Chair: Hiroshi Hirayama, Nagoya Inst. of Technology, Japan*

**15:20-15:40 SA4-1**

**Frequency-Tuning Four Printed-Spiral-Coils Wireless Power Transmission System With Backside Metallic Plates**

Shau-Gang Mao (National Taiwan University)

**15:40-16:00 SA4-2**

**Active Implantable Medical Device EMI Estimation for EV-WPT System Based on 3D Full-Wave Analysis**

Naoki TANAKA, Kanji YAHAGI, Takashi HIKAGE, Shoichi NARAHASHI, and Toshio NOJIMA (Hokkaido University)

**16:00-16:20 SA4-3**

**Study on a 5.8GHz Power-Variable Phase-Controlled Magnetron for Wireless Power Transfer**

Bo Yang, Tomohiko Mitani, Naoki Shinohara (Kyoto University)

**16:20-16:40 SA4-4**

**EMC of broadcasting and WPT**

CAI, Xiaomei (SAPPRFT)

**16:40-17:00 SA4-5**

**Wireless Charging System for Drones by using Two Small Rx Resonator Coils**

Sang-Won Kim, Seong-Min Kim, Jung-Ick Moon, Sang-Bong Jeon, In-Kui Cho (Electronics and Telecommunication Research Institute (ETRI))

## **Dec. 18, Sunday**

Room 104, Academic Exchange Center, Shahe Campus, University of Electronic Science and Technology of China

---

### **Session SU1: System-Level Design and EMC/EMI #2**

*Session Chair: Dr. Jinyan Li, University of Electronic Science and Technology of China, China*

**08:00-08:30 SU1-1**

#### **Recent Advances in Wireless Communication - From Component to System (Special Presentation)**

Yu-Yao Chen, Wei-Ting Tsai, Chong-Yi Liou, and Shau-Gang Mao (Graduate Institute of Communication Engineering, National Taiwan University)

**08:30-08:50 SU1-2**

**Microwave Power Transfer Using a Low Radiation and Low Transmission Loss Resin Waveguide**  
Shotaro Ishino, Koji Yano, Naoki Shinohara (Furuno Electric, Kyoto University)

**08:50-09:10 SU1-3**

**Power Management on Wireless In-Wheel Motor with Dynamic Wireless Power Transfer**  
Takuma Takeuchi, Takehiro Imura, Hiroshi Fujimoto and Yoichi Hori (The University of Tokyo)

**09:10-09:30 SU1-4**

**Design of A Wide Voltage Range Regulation Wireless Power Transfer System**  
Kaipeng Xing, Xin Liu, Yayun Dong, Houjun Tang (Shanghai Jiao Tong University)

**09:30-09:50 SU1-5**

**Wireless Power Transfer to Implantable Devices Using the Theory of Characteristic Modes**  
Kod Muayad, Jiafeng Zhou, Yi Huang, Manoj Stanley and Wei W. Lee (University of Liverpool, Zhejiang University of Technology)

**09:50-10:10 ,Tea Break**

### **Session SU2: System-Level Design and EMC/EMI #3**

*Session Chair: Dr. Jiafeng Zhou, University of Liverpool, United Kingdom*

**10:10-10:30 SU2-1**

#### **An Estimation Method for Finding the Hotspot Charging Zone of Wireless Power Transfer via 5G Massive MIMO Network**

Yu-De Liao, Ting-Wei Lin, An-Sung Wang, Ching-Chang Wong, Yang-Han Lee, Qiaowei Yuan, Naoki Shinohara, Qiang Chen (Tamkang University, Sendai National College of Technology, Kyoto University, Tohoku University)

**10:30-10:50 SU2-2**

#### **NB-IoT Using Wireless Power Transfer Antenna Array as Polling Protocol**

Ting-Wei Lin, Yu-De Liao, An-Sung Wang, Ching-Chang Wong, Yang-Han Lee, Qiaowei Yuan, Naoki Shinohara, Qiang Chen (Tamkang University, Sendai National College of Technology, Kyoto University, Tohoku University)

**10:50-11:10 SU2-3**

#### **A Novel Compensation Network with Stable Output Voltage at Different Loads**

Lan Jianyu and Yang Nan (Shanghai Institute of Space Power-Sources)

**11:10-11:30 SU2-4**

#### **Velocity Estimation and Control of DC Motor Driven by Wireless Power Transfer**

Takurou Nishimura, Katsuhiko Hata, Takehiro Imura, Yoichi Hori (The University of Tokyo)

**11:30-11:50 Student Paper Award Presentation**

**11:50-13:30 Lunch Break**

Wan-you Restaurant, Shahe Campus, University of Electronic Science and Technology of China

---