



IEEE 25th Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC)  
September 2 - 5, 2014  
CAPITAL HILTON, WASHINGTON, DC

## Workshop: "Current Challenges for Wireless Power Transfer"

Chairs: Seyed (Reza) Zekavat (Michigan Tech), Darel Preble (Space Solar Power Institute)  
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### Preliminary (WPT) Technical Program

WPT Session 1

Room: Federal B

#### **Welcome, Introduction & Peter Glaser Memorial Keynotes**

Chair: Darel Preble (Space Solar Power Institute, USA)

09:00 *Welcome and Introduction to Current Challenges for WPT*

Seyed (Reza) Zekavat (Michigan Technological University, USA)

09:15 *Peter Glaser Memorial Address*

Hiroshi Matsumoto-san (Kyoto University, Japan)

09:30 *Solar Power Satellite Frequency Selection*

James McSpadden (Raytheon, USA)

10:00 *Harvesting Wireless Power: Survey of Energy-Harvester Conversion Efficiency in Far-Field, Wireless Power Transfer Systems*

Christopher Valenta (Georgia Tech Research Institute - Electro-optical Systems Laboratory, USA); Gregory Durgin (Georgia Tech, USA)

10:30- 11:00 Coffee Break

WPT Session 2

#### **Antenna Theory and Practice for Power and Information Transfer**

Chair: Darel Preble (Space Solar Power Institute, USA)

11:00 *Simultaneous Wireless Information and Power Transfer with Co-Channel Interference*

Lansheng Hu (Xi'an Jiaotong University, P.R. China); Chao Zhang (Xi'an Jiaotong University, P.R. China); Jing Xu (Xi'an Jiaotong University, P.R. China)

11:30 *Antenna Theory, Design, and Demonstrations of the Role of Antennas in Wireless Power Transfer Application*

Timothy Cash (Optimal Solutions and Technologies, USA)

12:00 *Using a Pico-satellite Paradigm to Verify and Validate SSP at a Low cost to first power*

James Woods (Silver High Energy, USA)

12:30 *Panel Discussion on WPT Antenna Design*

Christopher Valenta (Georgia Tech Research Institute - Electro-optical Systems Laboratory, USA); Timothy Cash (Optimal Solutions and Technologies, USA); James McSpadden (Raytheon, USA); James Woods (Silver High Energy, USA)

12:40 -14:00 Lunch

WPT Session 3

**New Answers to Old Challenges for Space Solar Power**

Chair: Seyed (Reza) Zekavat (Michigan Technological University, USA)

14:00 *Over the Horizon Wireless Power Transmission, a Low-Cost Precursor for Space Solar Power*

Tanwin Chang (Deep Phase Labs, USA); Stephen J Blank (New York Institute of Technology, USA); Paul Jaffe (NRL, USA)

14:25 *Energy Efficiency Optimization of Simultaneous Wireless Information and Power Transfer System with Power Splitting Receiver*

Chengcheng Zhang (Beijing University of Posts and Telecommunications, P.R. China); Hui Zhao (Beijing University of Posts and Telecommunications, P.R. China); Wenfang Li (Beijing University of Posts and Telecommunications, P.R. China); Kan Zheng (Beijing University of Posts&Telecommunications, P.R. China); Juwo Yang (Beijing University of Posts and Telecommunications (BUPT), P.R. China)

14:50 *Challenges of Wireless Power Transfer for Prolonging User Equipment (UE) Lifetime in Wireless Networks*

Melike Erol-Kantarci (Clarkson University, USA); Hussein Mouftah (University of Ottawa, Canada)

15:15 *Panel Discussion on System Optimization for WPT lifetime optimization*

Melike Erol-Kantarci (Clarkson University, USA); Tanwin Chang (Deep Phase Labs, USA); Chengcheng Zhang (Beijing University of Posts and Telecommunications, P.R. China)

15:40 - 16:10 Coffee Break

WPT Session 4

**Solar Energy for Today and Tomorrow**

Chair: Seyed (Reza) Zekavat (Michigan Technological University, USA)

16:10 *Space Solar Power - Energy, Economy and Environmental Issues for Today and Tomorrow*

Darel Preble (Space Solar Power Institute, USA)

16:46 *NSF Investments in Solar Energy*

Gregory Rorrer (National Science Foundation, USA)

17:16 *Panel Discussion on Sustainable Solar Energy Policy and Investment in Renewable Energy Policy*

Darel Preble (Space Solar Power Institute, USA); Gregory Rorrer (National Science Foundation, USA); Gail Tverberg (Space Solar Power Institute, USA)