



## IEEE EDS Distinguished Lecturer Seminar

Time & date: September 23, 2016, 15:00-17:00

Venue: Conference room #1 (3F), Center for Innovative Integrated Electronic Systems (CIES),  
Tohoku University

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### Steep-Slope Devices for Future Ultra-Low Power Applications

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**Abstract:** With CMOS technology continues scaling, the standby power increases rapidly and becomes even higher than the active power. New devices with steep subthreshold slope have attracted much attention as possible solutions for power-constrained applications, such as IoT, wearable and implantable bio-medical applications. In this talk the recent research of steep-slope devices will be overviewed. A kind of new injection-tunneling hybrid-control operation mechanism for comprehensive property enhancement of traditional TFETs will be presented. Novel multi-finger Schottky barrier TFET (MFSB-TFET) with source pocket will be discussed with improved Figures of merit (FoM). The potentials and issues of steep slope devices will also be briefly discussed.

**Bio:** Ru Huang received the Ph.D. degree from Peking University, Beijing, China, in 1997. She joined the faculty of Peking University in 1997, and is currently a Professor and the Dean of School of Electronic Engineering and Computer Science, Peking University. Her research interests include emerging low power new devices, nonvolatile memory devices, and device reliability/variability. She has authored or coauthored four books and nearly 200 papers, including the papers in the top-tier conferences and journals in the field, such as IEDM, VLSI Technology Symposium, IEEE ED Letters, IEEE Transactions on ED. She is the holder of over 150 granted patents, the winner of many academic awards in China. Dr. Huang is the IEEE EDS Distinguished Lecturer, vice chair of EDS SRC R10 and elected BoG member. She was the General Chair/Co-Chair of ICSICT 2016/2014/2012 and ISPLED 2013, Technical Program Co-Chair of ICSICT 2004 and 2008, committee member of IEDM 2010-2011/2014-2015 and many other international conferences and symposiums.

**Organizers:** IEEE EDS Japan Chapter

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