IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM 2018)

Invited Session on

Power MEMS for Intelligent Internet of Things

Recent advances in internet of things (IoT) and low-power electronic devices reveal new insight into the understanding of traditional power sources with the new characteristics of mobility, sustainability and availability. The advancement of CMOS technology and micro/nano-electromechanical systems (MEMS/NEMS) enabled technologies makes the wireless sensor network (WSN) nodes and microelectronics become more miniaturized with low-power consumption and ease of integration. MEMS/NEMS-enabled self-powered micro and nano systems flourish as a major thrust area in internet of things (IoT) and artificial intelligence, reflecting the rapid proliferation of the commitment and success of the PowerMEMS research community. Micro/Nano energy harvesting systems as self-sustained power sources are capable of capturing and transforming unused ambient energy into electrical energy. They have been regarded as an alternative of conventional electrochemical battery, which will pave the way for actualizing energy-autonomous devices and intelligent monitoring activities. By integrating the micro/nano power sources with IoT, it would be a revolutionary technology in the next decades.

Potential topics include but are not limited to the following:

- Power MEMS and Green Energy
- MEMS/NEMS-Enabled Self-Powered Systems
- Power Electronics for MEMS-scale Energy Conversion
- Low-Power Mechanical/Physical Sensors and Microsystems
- Energy storage and Self-Charging Power Systems
- Wearable MEMS Energy Harvesters for Low-power Electronics
- Bio-Inspired Energy Generation, Conversion and Storage

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