



“Energy Harvesting”

The Theme: Energy harvesting from ambient energy resources is emerging as a potential solution to the scant and expensive conventional oil and gas resources. While renewable energy sources such as solar, wind, and ocean are promising in providing large powers for grid connected and stand alone applications, human power and vibration based energy harvesting are being considered to power low-power electronic devices due to their advantageous in terms of availability, requiring no chemical fuels, low environmental impact, lower costs, higher efficiencies, and having little heat signature. The widespread adaptation of portable electronic devices has led to a dramatic increase in energy consumption over the past two decades. Therefore, it is imperative to develop structures and power electronic interfaces to harvest a useful amount of energy to power these devices and improve the overall efficiency of the system. The main objective of this Special Section is to bring the ideas of the worldwide research community into common platform, to present the latest advances and developments in design, mathematical modeling, optimization, power electronic control, and practical implementation of energy harvesting from various environmental energy sources. Topics of interest of this Special Section include, but are not limited to:

- *Mesoscale* energy harvesting technologies from various environmental resources (Solar, wind, vibration, human motion, and etc.)
- *MEMS*-based energy harvesting/scavenging structures from various environmental resources (Vibration, human motion, and etc.)
- Modeling, design, and optimization of reconfigurable energy harvesting devices
- Novel power electronic converters for energy harvesting systems
- Modeling, control, and optimization of power electronic interfaces for energy harvesting/scavenging systems
- Power electronics and machine design for wearable electronic devices
- Novel applications of the energy harvesting devices

Manuscript Preparation and Submission

Follow the guidelines in “Information for Authors” in the IEEE Transaction on Industrial Electronics <http://tie.ieee-ies.org/tie/>
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Timetable

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