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Special track

WEHTIoT: Wireless Energy Harvesting Technologies for Internet of Things (IoT)

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along with
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Internet of Things (IoT) devices is well poised to explode the wireless world. It is expected that over 50B IoT devices to invade 2020. At this juncture, the major threat as such is to ensure needed power in order to sustain the seamless connectivity. The key requirement for IoT is to deploy the sensors in all kinds of locations, where the sensors have to gather information and provide periodic reporting for various applications. Such networked heterogeneous devices including sensors, processors and nodes which are battery powered fail to work if there is no proper balance between power generation and consumption of the devices. Hence it is imperative to focus on the reliability and sustainability of needed power as the mobile power sources such as batteries pose limitations in terms of usage, cyclability and cost.

Ubiquitous use of wireless RF transceivers facilitates the availability of abundant ambient RF Energy from large number of radio transmitters including cellular base stations, Wi-Fi routers and television and/or radio broadcast stations. RF energy scavenging and harvesting targets at salvaging RF energy and converting it into usable form to power devices like mobile electronics, wireless sensors, and other low power application devices. It provides green solution, eliminates manual charging and reduces the risk of health hazards associated with RF radiation. The ideal solution that satisfies the power hunger of existing Wireless Sensors and IoT devices is making such devices to be self-sustaining and/or supplementing the power supply via energy harvesting approach. The latter approach scavenges and harvests the energy from ambient or external sources and eliminates the need for batteries. The advancement of energy harvesting technologies with effective power management techniques maximises the performance of the networking elements and minimises the aggressive power consumption of active devices.

Energy harvesting devices are paired with Lithium ion batteries [Li-ion] that store the harvested energy. The amount of energy harvested by a device is relatively very small. Hence every node or device is programmed to be in dormant state to conserve energy and wake up only during data transmission. The existing energy storage devices like supercapacitors are ideal buffering the available energy and supplement batteries when needed. The seamless integration of IoT and Energy harvesting techniques reduces the installation and maintenance cost of the devices, thereby providing eco-friendly solution for inaccessible areas. This special track addresses the need for topics related power management techniques for wireless and IoT devices.

Topics include, but not limited to:

- Energy Harvesting Networks
- Memresistive Sensors
- Energy storage solutions for IoT devices
- Ultra-Low Power Electronics and Power Management
- Low Power System Design
- Wireless Power transfer
- Energy efficient resource allocation techniques
- Bio-based energy harvesting
- Energy efficient communication techniques and algorithms
- Energy aware routing protocols
- Cross layer optimization for maximum energy
- Energy Cooperating Networks
- Coordinated energy harvesting systems
- Energy management in the smart grid
- Energy generation and storage systems
- Energy-Efficient Routing Algorithms

Important Datelines

- Inform the Chair: As soon as you decided to contribute
- Submission: May 17
- Notification wit comments for camera-ready: May 24
- Registration: May 31
- Camera ready: May 31

Contribution Types
- Regular papers [in the proceedings, digital library]
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- Posters: slide only [slide-deck posted on www.iaria.org]
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Registration
- Each accepted paper needs at least one full registration, before the camera-ready manuscript can be included in the proceedings.
- Registration fees are available at http://www.iaria.org/registration.html

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