



# CALL FOR PAPERS

In recent years, impressive progress and extensive achievements in Computation, Communication, and Control areas have led to the development of Wireless Sensors Networks (WSNs) technologies. WSNs have been employed in many applications, such as healthcare, agriculture, environment, natural disasters, entertainment, and sports. WSNs are set to dominate all products and goods through RFID technologies. However, WSNs have gained more significance as the foundation infrastructure for a new and interesting technology era: the Internet of Things (IoT).

The IoT is an ambitious paradigm that unifies Internet and WSN in an integrated environment. This new system significantly increases the scale of connected devices with instantaneous communication and data processing. This novel environment has given a new meaning to the “Ubiquity of Internet,” the embedded communication capabilities, and the distributed networks. It has unified our life into the digital world.

IoT technologies have been adopted at a very rapid pace. By 2020, more than 50 billion objects will be connected to Internet (about \$10 trillion in the global economy). IoT can be considered one of the most significant technology waves in history of mankind. The impact of IoT will go beyond the transformation enabled by those remarkable technologies like GPS, mobile devices, and smartphones.

The IoT-based systems have opened unlimited opportunities for collaboration and innovation among many fields. The challenges to reach this goal are tremendous, but interesting and intellectually stimulating. Ultra-low power technologies come on the top; such requirements are carried over from WSN. Developing devices, circuits, architectures, communication, networking, protocols, and software for ultra-power technologies are considered a fundamental and basic requirement. Energy scavenging and alternative power sources are seriously considered in this new paradigm.

Novel and specific algorithms, communication, protocols, networks, and so forth should be developed taking into consideration the special and unique features of WSN and IoT. Recycling existing version will not help in developing efficient, robust, and responsive systems. Prototypes of applications such as wearable devices, smart homes, smart grids, smart transportation, smart cities, and smart healthcare are under development in several places. Industrial IoT (IIoT) is gaining a lot of momentum, too. As a matter of fact, industry has accepted IoT at a much faster rate than any other technology in the past.

Standardization should also be developed for both WSN and IoT structures. Global interoperable protocols should be developed that connect existing, new, and future objects. Interoperability standards at all layers should be developed.

Potential topics include, but are not limited to:

- ▶ Energy-efficient protocols for WSN and IoT
- ▶ Energy harvesting/scavenging for WSN and IoT
- ▶ Security and privacy architectures for WSN and IoT
- ▶ Interrelationship between WSN and IoT: similarities and differences
- ▶ WSN aspects that are critical for future IoT
- ▶ WSN issues and technologies for IoT applications
- ▶ IoT management and monitoring
- ▶ IoT platforms for education and applications
- ▶ Prototyping of experimental IoT systems
- ▶ IoT and cloud computing
- ▶ IoT technologies for healthcare, smart home, and smart grids
- ▶ IoT for emergency response in natural/man-made disasters

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