



## CALL FOR PAPERS

### The Computer Journal Special Issue on *Algorithms, Protocols, and Future Applications of Wireless Sensor Networks*

The remarkable advances of embedded micro-sensing MEMS and wireless communication technologies have promoted the development of wireless sensor networks (WSNs) which offer a new opportunity for pervasive and context-aware monitoring of physical environments. However, due to their limited resources and energy, WSNs can face many significant design challenges, and furthermore the WSN's deployment and topology will also influence the detection capability of a WSN. Once deployed, maintaining network operations (such as coverage and communication) while preserving sensors' energy is also a critical issue. To track objects, we need localization algorithms to accurately locate the objects and data aggregation algorithms to efficiently collect sensing data. Since sensors are often prone to error, security and fault-tolerance algorithms are necessary.

Recently, WSNs have been standardized by ZigBee and IEEE 802.15.4. In addition, mobile and vehicular sensor networks have opened a new frontier of research in WSNs. With mobility, sensor nodes can be dispatched to certain locations to conduct various missions. With WSNs and RFIDs together, we can develop many novel and e-life applications. The above are some of the many challenges of WSNs.

This special issue of The Computer Journal solicits the submission of papers on state-of-the-art research in algorithms, protocols, and future applications for WSNs. Submitted papers may address, but are not limited, to the following subjects:

- Network deployment and self-organization
- Adaptive topology management
- Network coverage and connectivity
- Communication protocol designs
- Energy and resource management
- Detection and tracking
- Localization algorithms
- Query processing and data aggregation
- Cross-layer designs and optimization algorithms
- Mobile and hybrid sensor networks
- Vehicular sensor networks
- ZigBee/IEEE 802.15.4 networks
- Novel applications of WSNs
- RFID techniques and applications
- Simulation frameworks and real-world testbeds
- Security and fault-tolerance algorithms
- Performance modeling and analysis

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#### **Submission Guidelines**

Only original and unpublished high-quality research papers are considered, and manuscripts must be in English. Instructions for authors can be found in <http://comjnl.oxfordjournals.org/>. The papers must be submitted via the journal web submission route (submission site is: <http://mc.manuscriptcentral.com/compj>) (Please provide a cover letter to indicate that the submission is for "the special issue on Algorithms, Protocols, and Future Applications of Wireless Sensor Networks") and simultaneously submit the PDF version of complete manuscript with its serial number to Dr. You-Chiun Wang (e-mail: [wangyc@cs.nctu.edu.tw](mailto:wangyc@cs.nctu.edu.tw)).

#### **Important Dates**

Manuscript submission deadline: 2009/08/15

Notification of acceptance: 2009/12/15

Submission of final revised paper: 2010/1/15

Publication of special issue: around 2010