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Recent advances of various sensor technologies, such as Internet of Things, sensor cloud, underwater sensor, healthcare sensor, have moved us toward the era of worldwide sensor networks. People can sense and collect necessary sensory data anytime and anywhere. However, efficient resource utilization in terms of energy consumption, spectrum allocation, routing selection, and so forth, is still a big challenge in the sensor networks. “Green” sensor network becomes an urgent task to be solved. On the other hand, the lack of cooperation among sensors not only affects the quality of communication, but also results in the unbalance of the resource utilization, which further reduces the robustness of the sensor system greatly. “Friendly” cooperation among sensors, such as information sharing, spectrum/energy awareness, routing adaptation, and data caching, enables providing potential benefits for optimizing and balancing the resource usage, hence improving the life-time of entirely sensor network. Therefore, green and friendly communication becomes the utmost important and promising research topic for future sensor networks.

The goal of this special issue is to bring together state-of-the-art research contributions that describe original technical work addressing the green and friendly communication in sensor networks.

Potential topics include, but are not limited to:

- ▶ Energy saving for sensor networks
- ▶ Cross-layer design and optimization for sensor networks
- ▶ Friendly adaption in sensor networks
- ▶ Green sensor cloud computing
- ▶ Low power sensor technologies in e-Health
- ▶ Resource tradeoffs and content distribution for WSN
- ▶ Cooperative caching and sharing in sensor networks
- ▶ Virtualization technologies of sensor networks
- ▶ Software defined networking (SDN) based sensor networks
- ▶ Collaborative communication and routing optimization in WSN
- ▶ Friendly streaming transmission for sensor networks
- ▶ Low-latency streaming communication for vehicular sensor networks
- ▶ Green multipath communication over sensor networks
- ▶ Cooperative protocols for high reliable sensor networks
- ▶ Efficient content-sharing management in sensor networks
- ▶ Performance optimization and energy management in sensor networks
- ▶ Scalable and efficient sensor architectures, protocols, and algorithms
- ▶ Service discovery and resource dynamic management in WSN
- ▶ Novel theories, models, and performance analysis for green sensor networks

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Manuscript Due

Friday, 23 January 2015

First Round of Reviews

Friday, 17 April 2015

Publication Date

Friday, 12 June 2015