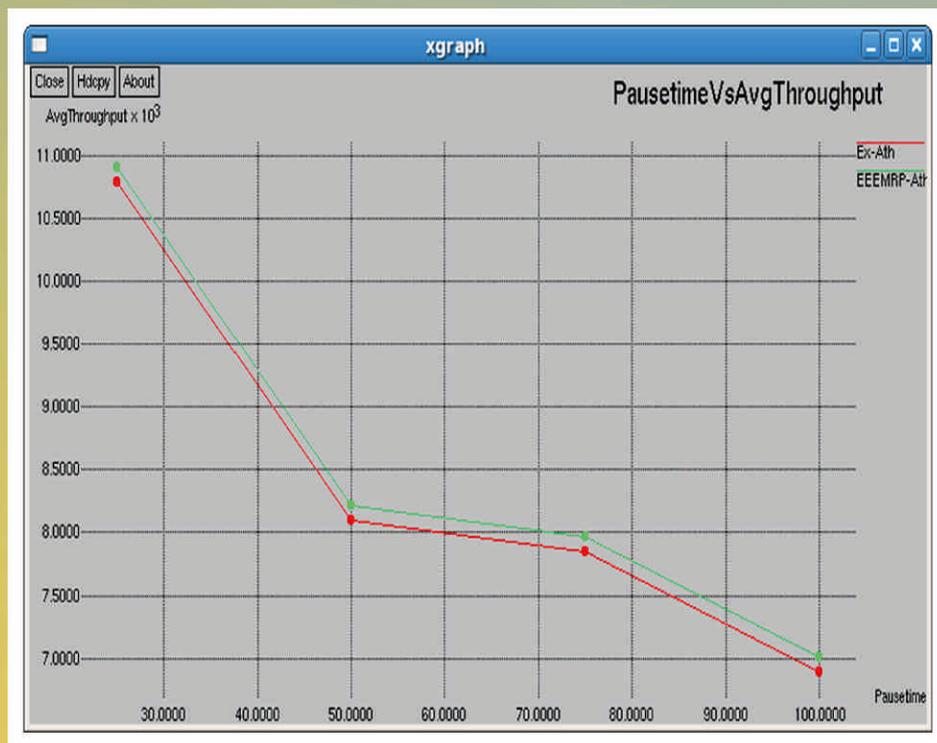




# WIRELESS SENSOR NETWORK

Editors-in-Chief: Prof. Kosai Raof      Prof. Min Song



ISSN: 1945-3078



# Journal Editorial Board

ISSN 1945-3078 (Print) ISSN 1945-3086 (Online)

<http://www.scirp.org/journal/wsn>

---

## Editors-in-Chief

**Prof. Kosai Raouf**

University of Maine, France

**Prof. Min Song**

The University of Toledo, USA

## Managing Executive Editor

**Dr. Yang Po**

University of Salford, UK

## Editorial Board

**Prof. Zhong-Yang Cheng**

Auburn University, USA

**Prof. Jong-Wha Chong**

Hanyang University, South Korea

**Prof. Peter Han Joo Chong**

Nanyang Technological University, Singapore

**Dr. Ashraf Darwish**

Helwan University, Egypt

**Dr. Arjan Durrresi**

Indiana University-Purdue University Indianapolis, USA

**Dr. Jeffrey J. Evans**

Purdue University, USA

**Prof. Paloma R. Horche**

Universidad Politécnica de Madrid, Spain

**Dr. Li Huang**

Interuniversity Microelectronics Centre, The Netherlands

**Dr. Badii Jouaber**

Telecom SudParis, France

**Dr. Ali M. El Kateeb**

The University of Michigan-Dearborn, USA

**Dr. Jingpeng Li**

The University of Nottingham, UK

**Dr. Juan Luo**

Hunan University, China

**Dr. Bala Natarajan**

Kansas State University, USA

**Prof. Shaharuddin Salleh**

University Technology Malaysia, Malaysia

**Prof. Mu-Chun Su**

National Central University, Chinese Taipei

**Dr. Preetha Thulasiraman**

Naval Postgraduate School, USA

**Prof. Gui Yun Tian**

University of Newcastle, UK

**Dr. Liang Wang**

Pacific Northwest National Laboratory, USA

**Dr. Qing Zhu**

Fujifilm Dimatix, Inc., USA

**Dr. Zhenyun Zhuang**

Internap, Inc., USA

# Table of Contents

Volume 6    Number 4

April 2014

**Comparison between OSPFv3 and OSPFv2**

M. E. Mustafa.....43

**Enhanced Energy Efficient Multipath Routing Protocol for Wireless Sensor Communication Networks Using Cuckoo Search Algorithm**

D. A. A. Raj, P. Sumathi.....49

## **Wireless Sensor Network (WSN)**

### **Journal Information**

#### **SUBSCRIPTIONS**

The *Wireless Sensor Network* (Online at Scientific Research Publishing, [www.SciRP.org](http://www.SciRP.org)) is published monthly by Scientific Research Publishing, Inc., USA.

#### **Subscription rates:**

Print: \$89 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: [sub@scirp.org](mailto:sub@scirp.org)

#### **SERVICES**

##### **Advertisements**

Advertisement Sales Department, E-mail: [service@scirp.org](mailto:service@scirp.org)

##### **Reprints (minimum quantity 100 copies)**

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: [sub@scirp.org](mailto:sub@scirp.org)

#### **COPYRIGHT**

##### **COPYRIGHT AND REUSE RIGHTS FOR THE FRONT MATTER OF THE JOURNAL:**

Copyright © 2014 by Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>

##### **COPYRIGHT FOR INDIVIDUAL PAPERS OF THE JOURNAL:**

Copyright © 2014 by author(s) and Scientific Research Publishing Inc.

##### **REUSE RIGHTS FOR INDIVIDUAL PAPERS:**

Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

##### **DISCLAIMER OF LIABILITY**

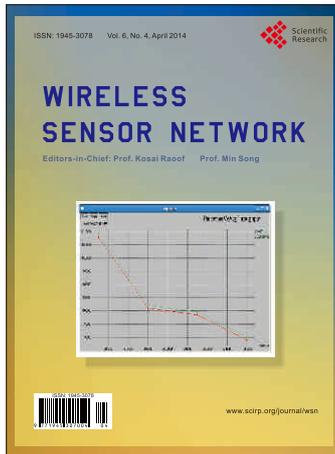
Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

#### **PRODUCTION INFORMATION**

For manuscripts that have been accepted for publication, please contact:

E-mail: [wsn@scirp.org](mailto:wsn@scirp.org)

***Call for Papers***



# Wireless Sensor Network (WSN)

<http://www.scirp.org/journal/wsn>

ISSN 1945-3078 (Print) ISSN 1945-3086 (Online)

WSN is an international refereed journal dedicated to the latest advancement of wireless sensor network and applications. The goal of this journal is to keep a record of the state-of-the-art research and promote the research work in these areas.

## **Editors-in-Chief**

**Prof. Kosai Raouf**  
**Prof. Min Song**

University of Maine, France  
The University of Toledo, USA

## **Subject Coverage**

This journal invites original research and review papers that address the following issues in wireless sensor networks. Topics of interest are (but not limited to):

- Data Fusion and Dynamic Inference of Network Information
- Integration of Sensor Networks and Web-Based Services
- Interconnection Architecture Aspects
- Location and Time Services
- Network and Transport Layer Protocols for Cross Networks
- New Applications of Sensor Network: Environmental Monitoring, Healthcare, Home Automation
- QoS Issues in WSN-Based Integrated Networks
- Reliability of Sensor Network and Failure Analysis
- Routing Protocols for Cross Networks
- Sensor Network for Smart Grid
- Sensor Tasking, Control and Actuation
- Sensor Technology
- Testbeds for Integrated Networks

We are also interested in short papers (letters) that clearly address a specific problem, and short survey or position papers that sketch the results or problems on a specific topic. Authors of selected short papers would be invited to write a regular paper on the same topic for future issues of the WSN.

## **Notes for Intending Authors**

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers are refereed through a peer review process. Authors are responsible for having their papers checked for style and grammar prior to submission to WSN. Papers may be rejected if the language is not satisfactory. For more details about the submissions, please access the website.

## **Website and E-Mail**

<http://www.scirp.org/journal/wsn>

E-mail: [wsn@scirp.org](mailto:wsn@scirp.org)

## ***What is SCIRP?***

Scientific Research Publishing (SCIRP) is one of the largest Open Access journal publishers. It is currently publishing more than 200 open access, online, peer-reviewed journals covering a wide range of academic disciplines. SCIRP serves the worldwide academic communities and contributes to the progress and application of science, by delivering superior scientific publications and scientific information solution provider that enable advancement in scientific research.

## ***What is Open Access?***

All original research papers published by SCIRP are made freely and permanently accessible online immediately upon publication. To be able to provide open access journals, SCIRP defrays operation costs from authors and subscription charges only for its printed version. Open access publishing allows an immediate, world-wide, barrier-free, open access to the full text of research papers, which is in the best interests of the scientific community.

- High visibility for maximum global exposure with open access publishing model
- Rigorous peer review of research papers
- Prompt faster publication with less cost
- Guaranteed targeted, multidisciplinary audience



**Scientific  
Research**

**Website: <http://www.scirp.org>**

**Subscription: [sub@scirp.org](mailto:sub@scirp.org)**

**Advertisement: [service@scirp.org](mailto:service@scirp.org)**