JOURNAL EDITORIAL BOARD

ISSN 1913-3715 (Print)  ISSN 1913-3723 (Online)
http://www.scirp.org/journal/ijcns/

Editor-in-Chief

Prof. Boris S. Verkhovskiy  New Jersey Institute of Technology, USA

Editorial Board

Prof. Dharma P. Agrawal  University of Cincinnati, USA
Prof. Andranik S. Akopov  National Research University, Higher School of Economics, Russia
Prof. Adel R. Awad  University of Tishreen, Syria
Prof. Albert R. Bakhtizin  Moscow State University, Russia
Prof. Hengda Cheng  Utah State University, USA
Prof. Ko Chi Chung  National University of Singapore, Singapore
Prof. Daniel Benevides da Costa  Federal University of Ceara, Brazil
Dr. Franca Delmastro  National Research Council, Italy
Prof. Sasa Divjak  Ljubljana University, Slovenia
Prof. Mohamed B. El-Mashade  Al-Azhar University, Egypt
Prof. Kurt J. Engemann  Iona College, USA
Prof. Mortezaz Esmaeili  Isfahan University of Technology, Iran
Prof. William Gruver  Simon Fraser University, Canada
Dr. Li Huang  Interuniversity Microelectronics Centre, Netherlands
Prof. Anca Daniela Ionita  University “Politehnica” of Bucharest, Romania
Prof. Hiroaki Ishii  Kwansei Gakuin University, Japan
Prof. N. Ch. S. N. Iyengar  Vellore Institute of Technology University, India
Dr. Markus Jakobsson  PayPal, USA
Dr. Dimitri Kanevsky  IBM T.J. Watson Research Center, USA
Prof. Felipe Lara-Rosano  National Autonomous University of Mexico, Mexico
Prof. Shahram Latifi  University of Nevada, Las Vegas, USA
Dr. Nicola Mastronardi  National Research Council, Italy
Dr. Lim Nguyen  University of Nebraska-Lincoln, USA
Prof. Yi Pan  Georgia State University, USA
Prof. Yuriy S. Polyakov  US Poly Research, USA
Prof. Suresh Rai  Louisiana State University, USA
Dr. Kosai Raoof  Joseph Fourier University, France
Prof. Bimal Roy  Indian Statistical Institute, India
Dr. Ashok N. Rudrapatna  Bell Labs., Alcatel-Lucent, USA
Prof. Shahruddin Salleh  University Technology Malaysia, Malaysia
Prof. Innokentiy V. Semushin  Ulyanovsk State University, Russia
Dr. Hirshikesh Venkataraman  Dublin City University, Ireland
Prof. Shi Ying  Wuhan University, China

Editorial Assistant

Jing Guo  Scientific Research Publishing, USA  Email: ijcns@scirp.org
## TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Volume 4</th>
<th>Number 11</th>
<th>November 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Algorithms for Integer Factorization Based on Counting Solutions of Various Modular Equations</td>
<td>B. Verkhovsky</td>
</tr>
<tr>
<td></td>
<td>A Topology-Based Conflict Detection System for Firewall Policies Using Bit-Vector-Based Spatial Calculus</td>
<td>S. Thanasegaran, Y. Yin, Y. Tateiwa, Y. Katayama, N. Takahashi</td>
</tr>
<tr>
<td></td>
<td>High-Gain Array Antenna Based on Composite Right/Left-Handed Transmission Line</td>
<td>N. L. Zhu, Q. Y. Feng, Z.-A. Wu</td>
</tr>
<tr>
<td></td>
<td>Multilayer Hex-Cells: A New Class of Hex-Cell Interconnection Networks for Massively Parallel Systems</td>
<td>M. Qatawneh</td>
</tr>
<tr>
<td></td>
<td>On the Performance of ISFET-Based Device for Water Quality Monitoring</td>
<td>P. Whig, S. N. Ahmad</td>
</tr>
<tr>
<td></td>
<td>Analysis of Computer Network Reliability and Criticality: Technique and Features</td>
<td>I. Elyasi-Komari, A. Gorbenko, V. Kharchenko, A. Mamalis</td>
</tr>
<tr>
<td></td>
<td>Distributed Frequency Assignment Using Hierarchical Cooperative Multi-Agent System</td>
<td>J. Elhachmi, Z. Guenoun</td>
</tr>
<tr>
<td></td>
<td>Computer-Based Infrastructure Sector Interdependencies and Security Implications</td>
<td>A. F. Obukohwo</td>
</tr>
<tr>
<td></td>
<td>Self-Oscillating Mixer (SOM) with 0.18 μm CMOS Technology</td>
<td>M. Sabaghi, S. R. Hadianamrei, B. Rezaei, M. Rahnama, M. N. Lahihi</td>
</tr>
<tr>
<td></td>
<td>Performance and Capacity Planning of NGN</td>
<td>M. Shakir, M. A. Khan, S. A. Malik, I. ul Haq</td>
</tr>
</tbody>
</table>

The figure on the front cover is from the article published in International Journal of Communications, Network and System Sciences, 2011, Vol. 4, No. 11, pp. 744-755 by Sié Ouattara, Georges Laussane Loum, Koné Adama and Alain Clément.
International Journal of Communications, Network and System Sciences (IJCNS)

Journal Information

SUBSCRIPTIONS


Subscription rates:
Print: $79 per issue.
To subscribe, please contact Journals Subscriptions Department, E-mail: sub@scirp.org

SERVICES

Advertisements
Advertisement Sales Department, E-mail: service@scirp.org

Reprints (minimum quantity 100 copies)
E-mail: sub@scirp.org

COPYRIGHT

Copyright©2011 Scientific Research Publishing, Inc.
All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as described below, without the permission in writing of the Publisher.

Copying of articles is not permitted except for personal and internal use, to the extent permitted by national copyright law, or under the terms of a license issued by the national Reproduction Rights Organization.

Requests for permission for other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale, and other enquiries should be addressed to the Publisher.

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: ijcns@scirp.org
International Journal of Communications, Network and System Sciences (IJCNS)

ISSN 1913-3715 (Print)  ISSN 1913-3723 (Online)
http://www.scirp.org/journal/ijcns

IJCNS is an international refereed journal dedicated to the latest advancement of communications and network technologies. The goal of this journal is to keep a record of the state-of-the-art research and promote the research work in these fast moving areas.

Editor-in-Chief

Prof. Boris S. Verkhovsky  New Jersey Institute of Technology, USA

Subject Coverage

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

<table>
<thead>
<tr>
<th>Ad Hoc and Mesh Networks</th>
<th>Network Protocol, QoS and Congestion Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding, Detection and Modulation</td>
<td>Network Survivability</td>
</tr>
<tr>
<td>Cognitive Radio</td>
<td>Next Generation Network Architectures</td>
</tr>
<tr>
<td>Communication Networks Architecture Design</td>
<td>Reconfigurable Networks</td>
</tr>
<tr>
<td>Communication Reliability and Privacy</td>
<td>Resource Management</td>
</tr>
<tr>
<td>Communication Security and Information Assurance</td>
<td>Satellite Communication</td>
</tr>
<tr>
<td>Cooperative Communications</td>
<td>Sensor Networks</td>
</tr>
<tr>
<td>Embedded Distributed Systems</td>
<td>Simulation and Optimization Tools</td>
</tr>
<tr>
<td>Global Networks</td>
<td>UWB Technologies</td>
</tr>
<tr>
<td>Heterogeneous Networking</td>
<td>Wave Propagation and Antenna Design</td>
</tr>
<tr>
<td>MIMO and OFDM Technologies</td>
<td>Wireless Personal Communications</td>
</tr>
</tbody>
</table>

We are also interested in:

- Short reports—Discussion corner of the journal:
  2-5 page papers where an author can either present an idea with theoretical background but has not yet completed the research needed for a complete paper or preliminary data.
- Book reviews—Comments and critiques.

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. For more details about the submissions, please access the website.

Website and E-Mail

http://www.scirp.org/journal/ijcns  E-mail: ijcns@scirp.org