

2006 First International Conference on Communications and Networking in China

**Beijing, China
25-27 October 2006**



**IEEE Catalog Number:
ISBN:**

**06EX1414
1-4244-0462-2**

**Copyright © 2006 by The Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republications permission, write to IEEE Copyrights Manager, IEEE Operations Center, 445 Hoes Lane, Piscataway, New Jersey USA 08854. All rights reserved.

IEEE Catalog Number: 06EX1414
ISBN: 1-4244-0462-2
Library of Congress: 2006926274

Additional Copies of This Publication Are Available from:

IEEE Service Center
445 Hoes Lane
Piscataway, NJ 08854
IEEE Service Center
445 Hoes Lane
Piscataway, NJ 08854
Phone: (800) 678-IEEE
 (732) 981-1393
Fax: (732) 981-9667
E-mail: customer-service@ieee.org

Table of Contents

Bio-inspired Promoters and Inhibitors for Self-Organized Network Security Facilities	1
<i>Falko Dressler</i>	
A Bio-Inspired Architecture for Division of Labour in SANETs	8
<i>Thomas Halva Labella, Falko Dressler</i>	
Stochastic Immune Layer Optimizer: efficient tool for optimization of combustion process in a boiler.....	16
<i>G. Jarmoszewicz, K. Swirski, K. Wojdan</i>	
Towards in vivo computing: Quantitative analysis of an artificial gene regulatory network behaving as a RS flip-flop and simulating the system in silico	22
<i>Sikander Hayat, Kai Ostermann, Lutz Bruschi, Wolfgang Pompe, Gerhard Rödel</i>	
An Ecology-Based Adaptive Network Control Scheme for Radio Resource Management in Heterogeneous Wireless Networks	29
<i>Jie Chen, Kai Yu, Guang Yang, ZhiYong Feng, Yang Ji, Ping Zhang, Qing Huang, Yong Bai, Lan Chen, Masahiro Minomo</i>	
Quantum information retrieval and gene networks	34
<i>Dimitri Petritis, Thomas Sierocinski</i>	
Understanding the Spread of Epidemics in Highly Partitioned Mobile Networks	35
<i>Iacopo Carreras, Daniele Miorandi, Geoffrey S. Canright, Kenth Engo-Monsen</i>	
An Ant Algorithm For Static And Dynamic Max-Sat Problems	43
<i>Pedro C. Pinto, Thomas A. Runkler, Joao M. C. Sousa</i>	
Modeling of Vocal Tract.....	51
<i>Zygmunt Ciota, Ma gorzata Napieralska, Andrzej Napieralski</i>	
Non-Intrusive Quality Evaluation of VoIP Using Genetic Programming	52
<i>Adil Raja., R. Muhammad Atif Azad, Colin Flanagan, Dorel Picovici, Conor Ryan</i>	
Self-Organization for Search in Peer-to-Peer Networks: The Exploitation-Exploration Dilemma	60
<i>Elke Michlmayr</i>	
Strategies for containing an influenza pandemic: the case of Italy	68
<i>Stefano Merler, Giuseppe Jurman, Cesare Furlanello, Caterina Rizzo, Antonino Bella, Marco Massari, Marta Luisa Ciofi degli Atti</i>	
Development of an artificial neural network for helping to diagnose diseases in urology	75
<i>Antonio Soriano Payá, Daniel Ruiz Fernández, David Gil Méndez, Carlos Alberto Montejo Hernández</i>	
Fireflies as Role Models for Synchronization in Ad Hoc Networks	79
<i>Alexander Tyrrell Gunther Auer, Christian Bettstetter</i>	
Crypto-fraglets: Networking, Biology and Security	86
<i>Marinella Petrocchi</i>	
A Conceptual Framework for Bio-Inspired Congestion Control In Communication Networks.....	91
<i>Morteza Analoui, Shahram Jamali</i>	
Organization-oriented chemical programming for the organic design of distributed computing systems.....	96
<i>Naoki Matsumaru, Peter Dittrich</i>	
Bio-inspired Context Gathering in Loosely Coupled Computing Environments	102
<i>Carsten Jacob, David Linner, Stephan Steglich, Ilja Radusch</i>	
The Adaptive Social Hierarchy - A Self Organizing Network Based on Naturally Occurring Structures.....	108
<i>Andrew Markham, Andrew Wilkinson</i>	
Biologically Inspired Self-Governance and Self-Organisation for Autonomic Networks	113
<i>Sasitharan Balasubramaniam, Dmitri Botvich, William John Strassner, Donnelly, Micheál Ó Foghlú</i>	
Immune System Based Distributed Node and Rate Selection in Wireless Sensor Networks	120
<i>Barys Atakan, Ozgur B. Akan</i>	

Table of Contents

A Cell-based Molecular Communication Network.....	128
<i>Tadashi Nakano, Michael Moore, Akihiro Enomoto, Tatsuya Suda, Takako Koujin, Tokuko Haraguchi, Yasushi Hiraoka</i>	
A Neuro-Fuzzy Approach to Diagnosis of Neonatal Jaundice.....	133
<i>Mohammad Sohani, Kamran Khosrovian Kermani, Behrooz Makki, Ali Riazati, Nasser Sadati</i>	
Exploring Biologically-inspired Evolvable Network Applications with the Beyond Architecture.....	137
<i>Chonho Lee, Hiroshi Wada, Junichi Suzuki</i>	
Stepwise Probabilistic Buffering for Epidemic Information Dissemination.....	145
<i>Emrah Ahi, Mine Çalar, Özmur Özkasap</i>	
A New Channel Coding Algorithm Based on Phosphorylation/dephosphorylationproteins and GTPases.....	153
<i>Jian-Qin Liu, Hidefumi Sawai</i>	
Logical Nano-Computation in Enzymatic Reaction Networks.....	158
<i>Martin Stetter, Bernd Schurmann, Michael Hofstetter</i>	
Cooperative Forensics Sharing.....	165
<i>Fareed Zaffar, Gershon Kedem</i>	
Evolving Artificial Cell Signaling Networks using Molecular Classifier Systems.....	174
<i>James Decraene, George Mitchell, Barry McMullin</i>	
A Molecular Communication Interface Using Liposomes with Gap Junction Proteins.....	182
<i>Yuki Moritani, Shin-ichiro M. Nomura, Satoshi Hiyama, Kazunari Akiyoshi, Tatsuya Suda</i>	
Digital Ecosystems: Evolving Service-Orientated Architectures.....	183
<i>Gerard Briscoe, Philippe De Wilde</i>	
A new bio-inspired location search algorithm for peer to peer network based Internet telephony.....	189
<i>Sachin Kulkarni, Niloy Ganguly, Geoffrey Canright, Andreas Deutsch</i>	
Proactive Attentive Support System.....	194
<i>Johan de Heer, Sorin M. Jacob, Alfons H. Salden, Wouter B. Teeuw</i>	
Controlled Propagation in Molecular Communication Using Tagged Liposome Containers.....	199
<i>Y. Sasaki, M. Hashizume, K. Maruo, N. Yamasaki, Y. Moritani, S. Hiyama, T. Suda, J. Kikuchi</i>	
A Library Framework for Implementing Genetic Algorithms in Java.....	200
<i>Bartosz Kozlowski, Varvara Fazalova</i>	
Overlay Network Symbiosis: Evolution and Cooperation.....	206
<i>Naoki Wakamiya, Masayuki Murata</i>	
Simulation of a Molecular Motor Based Communication Network.....	211
<i>Michael Moore, Akihiro Enomoto, Tadashi Nakano, Tatsuya Suda, Atsushi Kayasuga, Hiroaki Kojima, Hitoshi Sakakibara, Kazuhiro Oiwa</i>	
A Heuristic Routing Mechanism Using a New Addressing Scheme.....	212
<i>M. Ravanbakhsh, Y. Abbasi-Yadkori, M. Abbaspour, H. Sarbazi-Azad</i>	