Nano Communication Networks

Call for Papers

A Special Issue of Nano Communication Networks on "Biological Information and Communication Technology"

Bionanotechnology is becoming increasingly available and our understanding of cell and molecular biology has advanced to the extent that it is now feasible for information and communication systems to be designed and engineered from biological materials and mechanisms. Unlike traditional silicon-based counterparts, information and communication systems made of biological materials and mechanisms are able to operate more closely with biological systems, and thus, their use in medical applications is highly anticipated. In this special issue, we solicit original papers from the area of biological information and communication technology (Bio-ICT) that exploits biological materials and mechanisms to advance the information and communication technology. Survey and tutorial-type papers as well as position papers suggesting new directions in this area are also invited.

Topics of interest include (but are not limited to):

Understanding biological systems for Bio-ICT

Studies of biological systems (e.g., protein-to-protein interaction networks, metabolic networks, cell communication networks, human brain) in search of new theory, mechanisms, architecture, and algorithms that can advance the potential of ICT/Bio-ICT (e.g., non-von Neumann type computers, robust network architecture.)

System design methodology for Bio-ICT

Design and engineering of system components (e.g., logical computation units, memory, amplifiers, power supplies, transport mechanisms) based on biological materials and mechanisms (e.g., channel proteins, DNA molecules, cells), and methodology for integrating independent components into a larger-scale functional and bio-compatible system (e.g., bottom-up self-organization methods, interface design, standard protocols and architecture development).

Information and communication theory for Bio-ICT

Analysis of computing and communication aspects of Bio-ICT using information and communication theory (e.g., coding theory, communication theory, complex network theory, and signal processing theory and methods.)

Applications of Bio-ICT

Design and development of innovative applications of Bio-ICT, including molecular and cellular computing, bio-sensor and actuator networks, drug delivery, tissue engineering, nanomedicine, and nano/microelectromechanical systems (e.g., lab-on-a-chip and micrototal-analysis systems).

Guest Editors

Tadashi Nakano
Graduate School of Engineering
Osaka University
Osaka, Japan
tnakano@wakate.frc.eng.osaka-u.ac.jp

Jun Suzuki
Department of Computer Science
University of Massachusetts, Boston
Massachusetts, USA
jxs@cs.umb.edu

Important dates

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For more information
www.elsevier.com/computerscience

Submission Format and Guideline

All submitted papers must be clearly written in excellent English and contain only original work, which has not been published by or is currently under review for any other journal or conference. Papers must not exceed 25 pages (one-column, at least 11pt fonts) including figures, tables, and references. A detailed submission guideline is available as “Guide to Authors” at www.elsevier.com/locate/nanocomnet.

All manuscripts and any supplementary material should be submitted through Elsevier Editorial System (EES). The authors must select as “Special Issue: Bionanotechnology” when they reach the “Article Type” step in the submission process. The EES website is located at: http://ees.elsevier.com/nanocomnet/

All papers will be peer-reviewed by three independent reviewers. Requests for additional information should be addressed to the guest editors.