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ISSN: 1878-7789

DESCRIPTION

The Nano Communication Networks Journal is an international, archival and multi-disciplinary journal providing a publication vehicle for complete coverage of all topics of interest to those involved in all aspects of **nanoscale communication and networking**. Theoretical research contributions presenting new techniques, concepts or analyses; applied contributions reporting on experiences and experiments; and tutorial and survey manuscripts are published.

Nano Communication Networks is a part of the COMNET (Computer Networks) family of journals within Elsevier. The family of journals covers all aspects of networking except **nanonetworking**, which is the scope of this journal. Created in 2010, NANOCOMNET has four planned issues per year. In early 2016, the journal has been accepted by Thompson Reuters to have SCIE/ISI status, matching the status of the rest of the COMNET family.

Topics of interest include but are not limited to:

Molecular Communication

- Passive Molecular Communication systems, including short-range molecular diffusion, guided molecular diffusion (e.g. circulatory systems communications, microfluidic communications), ion signaling, and pheromone communications.
- Active Molecular Communication systems, such as molecular motors, bacteria-based nanonetworks.
- Brain networks, neural circuits and nervous systems communications.
- Synthetic biology for Molecular Communication development.

Electromagnetic Nanoscale Communication

- Plasmonic and nanophotonic devices for THz and optical communication based on nanomaterials (e.g., graphene) and metamaterials, including compact signal sources, modulators/demodulators, detectors and antennas and antenna arrays.
- Ultra-broadband and Terahertz communications, with applications at the nano-, micro- and macro-scales.
- Nanophotonic wired and wireless communications at infra-red, visible and ultra-violet spectrum ranges.

Other nanoscale communication paradigms

- Nano Communication for bio-therapeutic devices.
- Quantum communications.
- Ultrasonic communications.

Nano communication engineering and networking

- Architectures and systems for Nano Communications.
- Propagation and channel modeling for Nano Communications.
- Information Theory of Nano Communications.
- Communication protocols for Nano networks.
- Security in Nano Communications.
- Energy models for Nano Communications.
- Software-Defined Nanonetworks.

Nano Communication experimental and simulation platforms

- Tools for modeling and simulating Nano Communication Networks.
- Wet lab experimental platforms for Molecular Communications.
- New fabrication and assembly techniques for Electromagnetic nanoscale devices.
- Synthetic Biology toolsets for engineering Molecular Communications (e.g. Openwetware, CRISPR).

Applications of Nano Communications and networks

- Internet of Nano Things and the Internet of Bio-Nano Things.
- Network on Chip including RF and optical interconnects, as well as network architectures and topologies.
- Nano-Sensor and Nano-Actuator Networks.
- Nanomedicine applications: disease localization, targeted drug delivery, tissue engineering.

AUDIENCE

Researchers, academic personnel such as professors and graduate students, managers and operators of cross sections of interdisciplinary fields such as Electrical Engineering, Computer Science, Computer Engineering, Biology, Chemistry, Physics, Mathematics, Bioengineering, Bio-medicine, Medicine, who are interested in networking, communication, and design aspects of nano-scale devices.

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GUIDE FOR AUTHORS

INTRODUCTION

Nano Communication Networks will be committed to the very timely publication of very high-quality, peer-reviewed, original papers that advance the state-of-the-art and applications of all aspects of nano-scale networking and communications. Survey papers reviewing the state-of-the-art of timely topics will also be considered.

Topics of interest include but are not limited to:

1. Architectures and Systems for Nanocommunications
2. Novel Information Theory Aspects of Nanocommunications
3. Communication Protocols for Nanonetworks
4. Nano-addressing and Nano-coding for Communications
5. Molecular Communication aspects such as Ion Signaling, Molecular Motors, Flagellated Bacteria, Nanorods, Pheromones, Axons, Light Transducers, Capillaries
6. Quantum Theory and its Application on Nano-Communication Networks
7. Modeling and Simulation of Nano-Networks
8. Automata Models for Nanonetworks
9. Graph Theory Aspects of Nano-Networks
10. Nano-Sensor Networks: Architecture and Communication Protocols
11. Bio-nano Applications: Bio-micro/nanoelectronics, molecularscale chemical and biosensors, bio-MEMS technology, data and power management
12. Networks-on-Chip (NoC): Network architectures and topologies, NoC performance and trade-off analysis, Energy efficiency and power management, CAD flows for NoCs and MP-SoC platforms, Fault tolerance and reliability issues
13. Innovative System Interconnects: Nano-technologies and devices for on-chip interconnects (CNTs, semic., metallic and DNA-templated nanowires), Molecular, optical and wireless interconnects, Interconnects for non-charge-based devices
14. Electro-Magnetic Communication for Nanonetworks (Nanoscale Electromagnetics, Carbon Nanotubes, Propagation models for nanoscale communications, planning and optimization, nano-radios, nano-batteries, nanoscale antennas, nano-arrays, EM aspects at nanoscale, reconfigurability issues)
15. Nanonetworks in Terahertzband
16. Applications of Nano-Networks

Types of paper

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[1] J. van der Geer, J.A.J. Hanraads, R.A. Lupton, The art of writing a scientific article, *J. Sci. Commun.* 163 (2010) 51–59.

Reference to a book:

[2] W. Strunk Jr., E.B. White, *The Elements of Style*, fourth ed., Longman, New York, 2000.

Reference to a chapter in an edited book:

[3] G.R. Mettam, L.B. Adams, How to prepare an electronic version of your article, in: B.S. Jones, R.Z. Smith (Eds.), *Introduction to the Electronic Age*, E-Publishing Inc., New York, 2009, pp. 281–304.

Reference to a website:

[4] Cancer Research UK, *Cancer statistics reports for the UK*. <http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/>, 2003 (accessed 13 March 2003).

Reference to a dataset:

[dataset] [5] M. Oguro, S. Imahiro, S. Saito, T. Nakashizuka, Mortality data for Japanese oak wilt disease and surrounding forest compositions, *Mendeley Data*, v1, 2015. <https://doi.org/10.17632/xwj98nb39r.1>.

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