Call for Papers

Track ST3 – Selected Topic: Nano Communications and Networking

Track Chairs:

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Scope and Motivation:

The exploration of nanotechnologies in communication and networking has opened pathways to numerous applications, spanning biosensing, brain-machine interfaces, drug delivery, and beyond. Nano communication and networking is an interdisciplinary research area, which focuses on harnessing the potential of nanotechnology to revolutionize communication and networking systems by connecting molecules, nanoparticles, and nanodevices. This track encompasses a broad spectrum of research in nano communication and networking, including fundamental theories of molecular communication, nanophotonic communication, and quantum communication, nano antenna design, propagation, channel modeling, information theory, security, privacy, energy harvesting, simulator design, testbed design, and applications.

Main Topics of Interest:

The Nano Communications and Networking track seeks original contributions in the following areas, as well as others that are not explicitly listed but are closely related:

- Passive and active molecular communication systems
- Brain networks and neural communication networks
- Nanomaterial-based communication devices and networking systems
- Communications and networking for nano-enabled sensors and actuators
- Nano-photonics for communication and networking applications
- Electromagnetic nano communication systems
- Terahertz and optical communication systems for nano-scale sensing, communication, and networking
- Quantum communication and networking
- Nano communication and networking architectures
- Communication protocols tailored for nano-scale devices
- Cross-layer communication strategies for nano-scale communications
- Propagation and channel modeling for nano communications
- Integration of nano-scale communications with conventional communication protocols
- Signal processing for nano communications
- Information theory for nano communication and networking
- Bio-inspired nano communications and networking
- Integration of nanotechnology with Internet of Things (IoT)
- Security and privacy issues in nano-scale communication and networking
- Encryption and authentication in nano-scale communications
- Nano-bio interface and communication
- Energy harvesting and modeling for nano sensors and devices
- Nano communication and networking on chips
- Machine learning for nano communication and networking systems
- Simulation and modeling of nano-scale communication systems
- Prototype and testbed design for nano communication and networking systems