



Nano-Net 2009  
4th International Conference on Nano-Networks  
October 2009 Switzerland

[www.nanonets.org](http://www.nanonets.org)

*Sponsors: Create-Net, ICST*

## PRELIMINARY CONFERENCE ANNOUNCEMENT

**SCOPE:** The Nano-Net conference positions itself at the intersection of two worlds, namely, emerging nanotechnologies on one side, and Information & Communication Technologies on the other side. One of the standing questions that this conference addresses is: What are the new communication paradigms that derive from the transition from micro- to nano-scale devices? The convergence of nano-technologies with established and novel engineering disciplines such as communication and network theory, sensors and actuators, and bio-medical engineering is expected to radically shift our notions about efficient system and network design. Nano-Net provides a unique multidisciplinary forum for the discussion of novel techniques in modeling, design, simulation, and fabrication of nano-scale systems.

**PAPERS:** The conference invites original technical papers that have not been published and are not currently under review for publication elsewhere. Contributions addressing subjects pertaining to nanotechnology and networking are solicited. Suggested topics include, but are not limited to the following:

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### 1. Emerging nano-devices and fabrication technologies

CNTs, nanowires, nanoparticles, graphene devices, molecular processing and self-assembly, nano-patterning, emerging 3D-interconnects technologies, memristor, embedded memory technologies

### 2. Modeling and simulation of nano-devices and systems

Physical characterization and modeling of nano-devices, interconnects, CAD for nano-devices and communication, power/thermal modeling in nano-devices and systems

### 3. Nano-materials, nano-photonics

Coatings and surfaces, dendrimers, production techniques and applications in nanoelectronics, energy storage, catalysis, optical modulators and switches, optical and wireless interconnects, optical tweezers, photonic band-gaps, and applications

### 4. Nano-electronics and architectures

Quantum electronics, array processing nano-fabrics, processor and memory architecture in the nano-age, new computing paradigms, routing and addressing issues, NoC performance and trade-off analysis, hybrid CMOS-nano systems, molecular electronics

### 5. Reliability and fault-tolerance

Self-healing properties of nano-systems and networks, yield issues, reconfigurability, diagnosis and test, bio-inspired circuits and architectures

### 6. Nano-networks

Information theory aspects of nano-networks, network architectures and topologies, nano-coding, applications of complex network theory, modeling of nano/bio communication channels, wireless nanoscale transmitters and receivers

### 7. Nano-bio paradigms and applications

Lab-on-a-chip, nano-bio medicine, disease diagnosis, in-situ drug delivery, nano-array technologies, medical imaging

### 8. Nano-mechatronics

Nano-robotics, nano-sensors, nano-fluidics, nano-filtration, arrays of nano-mechatronic systems, molecular motors, NEMS, nanometrology

### 9. Emerging topics in nano-technologies

Standardization and regulatory issues, social and ethical aspects, nano-toxicology and safety impact, ecological impact, economic and market development and industrial applications

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**SUBMISSION INSTRUCTIONS:** Prospective authors are encouraged to submit a PDF version of a full paper in English. An author's Kit can be found at the following URL: [www.nanonets.org](http://www.nanonets.org).

**PUBLICATION:** All submitted papers will be subject to a rigorous peer-review. Accepted papers will be published by Springer in the Nano-Net Conference Proceedings, and made available online through Springer Lecture Notes in Computer Science (LNICST).

**WORKSHOP & TUTORIAL PROPOSALS:** Proposals for Special Sessions, Panel Sessions, and Tutorials are encouraged.

**IMPORTANT DATES:** Conference dates, paper submission deadlines, workshop, and tutorial deadlines available from:

[www.nanonets.org](http://www.nanonets.org)

**CONTACT:** For more information, or expression of interest in serving on organizing/technical committees: [alexandre.schmid@epfl.ch](mailto:alexandre.schmid@epfl.ch)

