



## Call for Papers for *Selected Areas in Communications Symposium* *Track: Nanotechnology in Communications*

### **Scope and Motivation:**

The nanotechnology area is a new and rapidly developing research domain that is expected to radically transform communications and computing for the future. Research at the nano-scale is typically at a range of 1nm to 100nm. Materials at the nano-scale can have different electrical, optical, and magnetic properties that can result in new applications. Performance and power characteristics of circuits at the nano-scale can also lead to new applications. As technologies rapidly evolve into the nanoscale, several challenges are anticipated with regard to successful creation and deployment of products in the communications area. The area of applications of nanotechnology in communications attempts to explore devices, materials, technologies, and systems, at the nanoscale that can be utilized to enable communications at the nanoscale. Communications can occur over wires such as 3D silicon nanowires for chip design, or through wireless communications using carbon nanotube or graphene-based radios, or could utilize diffusion-based molecular communication that carry information slowly but surely, or through the design of new nanosystems to enable communications at this scale.

### **Main Topics of Interest:**

Researchers are invited to submit papers related to topics of interest that include but are not limited to:

- NEMS for communications
- Optoelectronic nanotechnologies for communications
- Nano-interconnects for communication networks
- Nano-interconnects for 3D die stacking
- Nano-sensor design
- Nano-scale networks
- Nano-display technologies
- Nano-energy generators
- Energy-scavenging
- Non-linear design
- Nano-materials for RF design
- RF design in nm-CMOS process technologies

- Graphene-based applications
- Group-III Nitride-based applications
- Silicon nanowire-based applications
- Nano-material research
- Nano-manufacturing
- Medical and biological applications

### **Sponsoring Technical Committees:**

- Emerging Technology Subcommittees on (a) Applications of Nanotechnology in Communications; (b) Nano-scale, Molecular and Quantum Networking

### **How to Submit a Paper:**

The IEEE Globecom 2014 website provides full instructions on how to submit papers. You will select the desired symposium when submitting. **The paper submission deadline is April 1, 2014. Unlike recent ICC's and Globecom's, this is a hard deadline that will not be extended.**

### **Symposium Track-Chair:**

Dilip Krishnaswamy, IBM Research, India, [dilip@ieee.org](mailto:dilip@ieee.org) , [dilikris@in.ibm.com](mailto:dilikris@in.ibm.com)



#### **Biography:**

Dr. Dilip Krishnaswamy is a senior researcher at IBM Research Labs in Bangalore, India. His current research interests include nanoscale information processing, edge processing systems, smarter planet systems, hierarchical distributed analytics, wireless distributed computing, parallel processing, and nano-biological networks. He graduated with a Ph.D. degree in Electrical Engineering in 1997 from the University of Illinois at Urbana-Champaign. He received the best paper award for research related to his thesis in the parallel processing area for the 1997 IEEE VLSI Test Symposium. He was a Platform Architect at Intel where he worked on various projects including the Pentium4 processor development, system-on-chip mobile platform architectures (lead architect for Intel's first cellular SoC - PXA800F), and cross-layer wireless multimedia optimizations in the digital home. He taught courses related to parallel computer architecture, and advanced digital systems design, at the University of California, Davis, where he now serves on the Industrial Board of Advisors. Since late 2006, he was a senior staff researcher at the Qualcomm Research Center in San Diego, California. At Qualcomm, he worked on self-aware platforms, m2m service layer middleware, collaborative wireless nanobots for cancer therapy, Continua healthcare/oneM2M/DTN standards development, wireless distributed computing, parallel wireless communications & concurrent bandwidth aggregation, heterogeneous cooperative techniques, user modeling for distributed analytics, data-mining, and adhoc heterogeneous tunneled access technologies . He serves as the Associate Editor-in-chief of the IEEE Wireless Communications Magazine. He chairs the IEEE comsoc emerging technical subcommittee on Applications of Nanotechnologies in Communications. He is an editor for the Journal of Nano Communication Networks.