

Call for Papers

IEEE Journal on Emerging and Selected Topics in Circuits and Systems

Guest editor

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Scope and purpose

The IEEE Journal on Emerging and Selected Topics in Circuits and Systems (JETCAS) seeks original contributions for an issue on New Interconnect Technologies in On-chip Communication to appear in June 2012. With Moore's Law and the abundant amount of computation available in multi-/many-core processors, the communication is becoming the bottleneck of these systems and often determines the scalability, both in terms of cost and performance. To overcome the limitations of conventional electrical signaling communication, alternative technologies have been recently proposed and will not only impact how data is communicated but also, the system design. The purpose of this issue is to report on recent and original advances on enabling circuit and system designs related to new interconnect technologies that have been proposed and the design of on-chip communication architecture that leverage these new technology.

Topic of interest

Topics of interest for this issue include, but are not limited to:

- **Circuit Design**

Circuit designs for new interconnect technologies, including but not limited to nanophotonics, 3D stacking, RF signaling, capacitive coupling, inductive coupling, transmission lines, as well as asynchronous communication.

- **On-Chip Communication Architecture**

Network-on-chip (NoC) or other communication architectures that exploit these new interconnect topologies, including topology, routing algorithm, flow control, and router microarchitecture; as well as hybrid or heterogeneous NoC architectures that combine different signaling technologies.

- **Application/System Design**

Impact of new interconnect technology on system design, including on-chip cache hierarchy, CPU organization, and main memory organization. Core-to-memory communication using these new interconnect technology to extend the benefits of the technology for communication with off-chip memory.

Important dates

+ Manuscript submissions due	December 16, 2011
+ First round of reviews completed	January 27, 2012
+ Revised manuscripts due	February 17, 2012
+ Second round of reviews completed	March 9, 2012
+ Final manuscripts due	March 30, 2012

Request for information

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