

Call for Papers

ACM JETC Special Issue on Emerging Networks-on-Chip: Designs, Technologies, and Applications



Guest Editors

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For decades, Moore's Law coupled with Dennard scaling has resulted in increasing transistor integration capacity with a constant power density. However, with the end of Dennard scaling, power efficiency in multicore designs has become a concern. Studies have shown that global metallic interconnects will consume significant amounts of power to achieve the communication bandwidth that will be required by future Chip Multi-Processors (CMPs). An energy-efficient inter- and intra-chip communication infrastructure is the key to guarantee the continuous growth of CMPs. Compared to the traditional planar metallic interconnects, emerging technologies such as silicon photonics and wireless can offer unprecedented advantages to the future generations of CMPs. Nevertheless, many challenges should be addressed to exploit the full potential of such alternative interconnect technologies, at any abstraction level, from the very bottom level of device manufacturing to the architecture and system level. The *ACM Journal on Emerging Technologies in Computing Systems (JETC)* seeks original manuscripts for a special issue on "Emerging Networks-on-Chip: Designs, Technologies, and Applications", scheduled for publication in July 2018. The purpose of this special issue is to solicit papers discussing the latest advancements in the design and technology of emerging networks-on-chip and evaluate their future prospects. Contributions that include real case studies and applications are especially welcome.

The topics of interest include, but are not limited to:

- Emerging networks-on-chip interconnects (silicon photonics, wireless, carbon-based, quantum, superconducting, etc.)
- 3D integration and packaging
- Power- and thermal-aware design of emerging networks-on-chip
- Fault-tolerance and reliability of emerging networks-on-chip
- Application-specific design of emerging networks-on-chip

Interested authors should submit their papers to <https://mc.manuscriptcentral.com/jetc>. The author guideline can be found at <http://jetc.acm.org/authors.cfm>. For further information, please contact Edoardo Fusella (edoardo.fusella@unina.it) or Mahdi Nikdast (mahdi.nikdast@mcgill.ca).

Schedule

Submission deadline:	30 th September, 2017
Reviews completed:	31 st December, 2017
Article revisions due:	28 th February, 2018
Notice of final acceptance:	31 st March, 2018
All materials due to edit:	15 th April, 2018
Tentative Publication Date:	July 2018