Call for Papers
ACM JETC Special Issue on Silicon Photonics

Guest Editors:
Jiang Xu, Hong Kong University of Science and Technology
Yuichi Nakamura, System Platform Research Labs, NEC
Andrew Kahng, University of California San Diego

Computing systems, from HPC and data center to automobile, aircraft, and cellphone, are integrating growing numbers of processors, accelerators, memories, and peripherals to meet the burgeoning performance requirements of new applications under tight cost, energy, thermal, space, and weight constraints. Recent advances in photonics technologies promise ultra-high bandwidth, low latency, and great energy efficiency to alleviate the inter/intra-rack, inter/intra-board, and inter/intra-chip communication bottlenecks in computing systems. Silicon photonics technologies piggyback onto developed silicon fabrication processes to provide viable and cost-effective solutions. Many companies and institutes have been actively developing silicon photonics technologies for more than a decade. A large number of silicon photonics devices and circuits have been demonstrated in CMOS-compatible fabrication processes. Silicon photonics technologies open up new opportunities for applications, architectures, design techniques, and design automation tools to fully explore new approaches and address the challenges of next-generation computing systems. The Special Issue on Silicon Photonics will present the latest progresses and provides insights into the challenges and future developments of this emerging area.

The list of topics covered by the special issue includes, but not limited to, the following.

- Photonics/optics technology oriented architectures
- Integrated photonic/optical switching fabrics
- High-radix optical switches for data centers and HPCs
- Tools and techniques for optical thermal effects
- Tools and techniques for optical crosstalk noises
- Tools and techniques for optical process variations
- Design automation for photonics/optics technology oriented architectures
- Mixed optical-electrical modeling, analysis, and simulation platforms

Interested authors should submit their works to https://mc.manuscriptcentral.com/jetc. The author guideline can be found at http://jetc.acm.org/authors.cfm. For further information, please contact Jiang Xu (jiang.xu@ust.hk).

Important Dates

- Submission Deadline: April 30th 2017
- Author Notification: July 1st 2017
- Revised Manuscript Due: August 15th 2017
- Notification of Acceptance: October 15th 2017
- Final Manuscript Due: November 30th 2017
- Tentative Publication Date: July 2018