ACM Journal on
Emerging Technologies in Computing Systems

Call for Papers:
Special Issue on Emerging Many-core Systems for Exascale Computing

General Scope

To scale computing systems to Exaflops, future many-core systems will require the integration of hundreds of cores on a single chip. The large number of cores in emerging many-core systems introduces complexities associated with resource sharing, parallel programming, heterogeneity, distributed memory architectures, and implementation challenges such as 3D stacking. The design of such architectures will require new innovations in all areas of circuits and systems.

The goal of this special issue is to present and discuss innovative ideas and solutions in the design, modelling, prototyping, programming, and implementation of many-core systems for exascale computing. Topics of interest include, but are not limited to:

- Mapping of applications onto many-core systems
- On-chip interconnection (e.g. NoC)
- Domain-specific many-core processors
- Fault-tolerance and reliability
- Thermal and power-aware techniques
- 3-D stacked technology
- Compiler for many-core systems
- Reconfigurable computing
- (Embedded) operating systems
- Computer arithmetic
- Synthesis, verification, debug & test
- Design methodologies and tools
- FPGA and ASIC prototyping
- GPU implementation
- Memory system design and optimizations
- Heterogeneity challenges
- Modeling and simulation of many-cores

Submitted articles must not have been previously published or currently submitted for publication elsewhere. For work that has been published previously in a conference, it is required that submissions to the special issue have at least 30% new content. Submissions that do not meet this requirement will be returned without review. The papers should be submitted via the Manuscript Central website (http://mc.manuscriptcentral.com/jetc) and should adhere to journal formatting requirements (http://jetc.acm.org/).

Important Dates
Submission deadline: 1 February 2014
Notification of interim decision: 1 June 2014
Revised paper submission due: 1 August 2014
Final decision: 15 October 2014
Final paper due: 15 November 2014
Target publication: April/May 2015

***Guest Editors (in alphabetical order)*:**
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