



## CALL FOR PAPERS

ACM Transactions on Design Automation of Electronic Systems

Special Issue on

**Verification Issues and Challenges with Multicore Systems**

**Submission Deadline: May 13, 2011, 11:59PM Pacific Daylight Time**

### Organizers

**Editor-in-Chief:**  
Massoud Pedram

**Guest Editors:**  
Sandip Ray (UT Austin)  
Jayanta Bhadra (Freescale)  
Magdy S. Abadir (Freescale)  
Li-C Wang (UC Santa Barbara)

**Regular Editor:**  
Aarti Gupta (NEC Labs)

### Aims and Scope

With sequential processing hitting various performance limits, multicore architectures are being increasingly adopted to answer the growing demands of efficiency of modern applications. The trend is expected to continue. Systems built on multicore architectures provide unique challenges and opportunities for verification research. On the one hand, parallelism and added complexity induced by the increased cores makes the verification of multicore systems an extremely challenging enterprise. On the other hand, the high computing power of these systems can be exploited to provide efficient and robust verification solutions. With continuing proliferation of multicore systems, verification challenges induced by these systems will play an increasingly crucial role in the development of trustworthy computing systems. The verification community has made significant strides in recent years, both in answering the verification challenges induced by the concurrency, and in making effective use of the concurrency to do so. However, there is still a significant gap between the accomplishments and needs in the area. Furthermore, the area is daunting to a new researcher contemplating to initiate work in this area. One key problem is the lack of a unified and coherent literature that can provide a comprehensive "lay of the land", capturing the current state of the research and helping us understand the gap between the accomplishments and research needs.

ACM Transaction on Design Automation of Electronic Systems (ACM TODAES) will publish a special issue on Verification Issues and Challenges in Multicore Computing, with the goal to rectify the above and disseminate developments and research results in the area. We invite submissions describing novel work both on (1) verification challenges induced by multicore systems, and (2) the use of multicore and concurrent systems in addressing verification challenges. Topics of interest to the special issue include, but are not limited to, the following:

- Verification methods (dynamic and formal) for thread programs,
- Verification of MPI programs
- Methods for formalizing and reasoning about weak memory consistency models
- Verification of cache coherence and memory ordering protocols in multicore systems
- Effective use of concurrency in simulation, symbolic simulation and model checking

### Submission format:

Submissions should be written in general terms understandable by the usual audience of the journal. The work must not have been published before; substantial extension of preliminary conference papers is permitted, but the corresponding conference papers must be cited along with a discussion on the nature of extension and novel contributions in the current submission. Concurrent submission to any other conference or journal is a ground for rejection of a paper without review. All papers will be fully refereed to the usual journal standards. Since a key objective of the special issue is to provide a comprehensive reference for the different research challenges and progress made in the area, a detailed discussion of related research is expected.

Submissions should be formatted according to TODAES author guidelines available at: <http://todaes.acm.org/author.html#ManuscriptPreparation>

### Dates:

Paper Submission      May 13, 2011  
Notification              July 20, 2011  
Camera-ready version    September 10, 2011

### Submission procedure:

Submission must be made through the ACM Manuscript Central (<http://mc.manuscriptcentral.com/todaes>) and must contain the following information:

1. Title of the paper
2. Names and affiliations of the authors
3. An abstract not exceeding 300 words
4. A list of at most five keywords (optional)
5. A pdf version of the full paper

### Contact Information:

Please send any questions or enquiries to [todaes.multicore@gmail.com](mailto:todaes.multicore@gmail.com)