

**CALL FOR PAPERS**  
**Emerging Computational Paradigms and Architectures for Multicore Platforms**  
**IEEE Transactions on Emerging Topics in Computing**  
**Special Issue/Section**  
**Second Issue of 2016**

IEEE Transaction on Emerging Topics in Computing (TETC) seeks original manuscripts for a Special Issue/Section on **emerging computational paradigms and architectures for multicore platforms** scheduled to appear in the **fourth issue of 2016**.

Multicore and many core embedded architectures are emerging as computational platforms in many application domains ranging from high performance computing to deeply embedded systems. The new generations of parallel systems, both homogeneous and heterogeneous that are developed on top of these architectures represent what is called *the emerging computing continuum paradigm*. A successful evolution of this paradigm is however imposing various challenges from both an architectural and a programming point of view. The design of embedded multicores/manycore requires innovative hardware specification and modeling strategies, as well as low power simulation, analysis and testing. New synthesis approaches, possibly including reliability and variability compensation, are key issues in the coming technology nodes. Furthermore, thermal aware design is mandatory to manage power density issues. The design of effective interconnection networks is a key enabling technology in a manycore paradigm. New solutions such as photonics and RF NoCs architectures are emerging solutions on this regard. At the same time, these new interconnection systems have to be compliant with innovative 3D VLSI packaging technologies involving vertical interconnections in 3D and stacked ICs. These design solutions enable the integration of more and more IPs, resulting in heterogeneous platform where reconfigurable components, multi-DSP engines and GPUs collaborate to provide the target performance and energy requirements. Along with design and architectural innovations, many challenges have to be faced to enable an effective programming environment to many core systems. These challenges call for innovative solutions at the various levels of the programming toolchain, including compilers, programming models, runtime management and operating systems aspects. Holistic and cross-layer programming approaches have to be targeted considering not only performance, but also energy, dependability and real-time requirements. Finally, on the application side, multicore/manycore embedded systems are pushing developments in various domains such as biomedical, health care, internet of things, smart mobility, and aviation.

This special issue/section asks for emerging computation technology aspects related, but not limited to the mentioned topics. Contributions must be original and highlight emerging computation technologies in design, testing and programming multicore and manycore systems.

Submitted articles must not have been previously published or currently submitted for journal publication elsewhere. As an author, you are responsible for understanding and adhering to our submission guidelines. You can access them at the IEEE Computer Society web site, [www.computer.org](http://www.computer.org). Please thoroughly read these before submitting your manuscript. TETC is the newest Transactions of the IEEE Computer Society with Open Access only.

Please submit your paper to Manuscript Central at <https://mc.manuscriptcentral.com/tetc-cs>

Please note the following important dates.

- **Submission Deadline: December 1st, 2015**
- **Reviews Completed: March 1st, 2016**
- **Major Revisions Due (if Needed): April 1st, 2016**
- **Reviews of Revisions Completed (if Needed): May 1st, 2016**
- **Minor Revisions Due (if Needed): June 1st, 2016**
- **Notification of Final Acceptance: August 1st, 2016**
- **Publication Materials for Final Manuscripts Due: September 1st, 2016**
- **Publication date: Last issue of 2016 (December)**

Please address all other correspondence regarding this special Section to Lead Guest Editor **Alberto Macii**

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