

IEEE JOURNAL ON EMERGING AND SELECTED TOPICS IN CIRCUITS AND SYSTEMS

CALL for PAPERS

Solid-state Memristive Devices and Systems

Guest editors

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Scope, purpose and submission procedure

Nanotechnology has entered its most disruptive phase. After several decades of fundamental investigation on hysteretic switching phenomenon, a truly explosive amount of knowledge has been generated about nanometer scale electronic effects in a very wide range of resistive switching materials, also known as memristors. The impact of memristors is currently realized through their potential in establishing high spatial- and high storage-density beyond the current CMOS technological roadmap for memory and computation. Besides conventional applications, the unconventional dynamics of memristive devices often correlate with counterpart biological systems that are capable of regulating the bio-information flow along with transcribing memory. The unusual electronic phenomena and the rich dynamics of memristive devices made them one of the most promising candidates beyond CMOS. Therefore, innovation is required at the device, circuit and system levels to build upon great progress that has been seen in the past six years in the multidisciplinary field of *solid-state memristive devices and systems*.

Through this JETCAS special issue, we seek novel research papers covering different aspects of this emerging technology, including practical nanodevices, physical switching mechanisms, circuits and emerging applications. Special emphasis must be put on the practical application and experimental studies in circuits and systems based on memristive nanodevices.

Topics of interest

This Special Issue on Solid-State Memristive Devices and Systems calls for contributions on three main areas of interest:

- I. Future memory devices,
- II. ultra-low power computation applications, and
- III. bio-inspired circuits and systems.

The list of potential contributions includes:

- Information storage at the nano-scale
- Bio-inspired/-mimetic memory and computation
- Neuromorphic circuits and systems
- Memristor-based circuits
- Applications exploiting memristors
- CMOS integration
- Cellular automata and array computing
- Chaos and complex networks

Important dates

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|-------------------------------------|-------------------|
| • Manuscript submissions due | 2014-10-17 |
| • First round of reviews completed | 2014-11-21 |
| • Revised manuscripts due | 2014-12-19 |
| • Second round of reviews completed | 2015-01-16 |
| • Final manuscripts due | 2015-02-06 |

Request for information

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