The 30th International Conference on Microelectronics

Call for Special Session Papers

16-19 December 2018, Tunisia

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Special Session on

Energy Efficient Cyber Physical Systems

Last generation computing architectures have evolved from traditional standalone Embedded Systems to become complex environments where computational elements tightly interact with physical entities such as sensors networks and I/O devices. These systems, usually referred as Cyber-physical Systems (CPS), enabled a flourishing ecosystem of architectures and platforms where smart objects, users and communication infrastructures interact to support intelligent context-aware services and applications. Smart grids, medical monitoring, smart cities, distributed pollution and tracking are just a few examples of concrete applications that are gaining attraction among industries and institutions.

However, the mobility and pervasivity requirements of such environments impose energy consumption constraints that must be met in a context of increasing computational needs, due the processing of large amount of data coming from sensing and input devices. The conventional approach of providing such computational resources by means of cloud computing is becoming the limiting factor in the design of the future CPS, since the increased communication effort required to perform the data off-loading to external resources represents the major contribution to the overall energy consumption of the smart device. Due to the power hungry nature of the communication infrastructure, it can be envisaged a trend in which the smartness of the "things" will be even more shifted toward the things themselves rather than toward the cloud. Based on this, improving the computational capabilities of the smart objects in a even more limited energy envelope, becomes a key issue.

The workshop aims at exploring emerging approaches, ideas and contributions to address the challenges in the design of energy efficient computational-centric smart objects in CPS.

Topics of interest include, but not limited to:

- Novel architectures for embedded low power computing CPS.
- Deep learning Low Power architectures
- Communication infrastructures for energy efficient embedded environments.
- Power Management algorithms and strategies for CPS
- Approximate/Imprecise Computing for energy-efficient applications
- Energy-aware Parallel architectures for high performance computing
- Design Platforms and Tools for IoT-based ecosystems for optimizing energy / performance tradeoffs.

Authors are invited to submit full-length (4 pages) papers, in IEEE format, using the guidelines in the authors' info. Special session papers must be submitted by e-mail in PDF format to the organizers of the session. Accepted papers will be published in the electronic Conference Proceedings (CD ROM) and will be submitted to IEEE Xplore®.

Special Session Organizer:

Davide Patti, Electric, Electronics and Computer Engineering Department of the University of Catania (DIEEI)
E-mail: davide.patti@dieei.unict.it

Important Dates:

- **Research Paper Submission:** ~~September 30~~,October 10, 2018
- **Notification of Acceptance:** ~~October 7~~, October 30, 2018
- **Camera Ready Submission:** ~~October 18~~, November 10, 2018