

Special Issue

Quantum-Dot Cellular Automata (QCA) and Low Power Application

Message from the Guest Editor

As transistors have decreased in size, more and more of them have been accommodated in a single die, thus, increasing chip computational capabilities. However, traditional transistors cannot get much smaller than their current size, which causes a large impact on the speed performance and power consumption of future designs. The challenges created by this trend could be partially met by innovative technologies, proposed as alternatives to the classic CMOS. This Special Issue of *JLPEA* is dedicated to advances in all aspects of QCA-based digital designs, from the introduction of new basic logic functions, up to innovative layout strategies, including advanced EDA tools and algorithms to support QCA designers. Original contributions from the following non-exhaustive list of topics are solicited:

- specialized QCA-based logic structures and interconnections;
- innovative clock schemes to control data flow directionality;
- smart formulations of logic equations;
- arithmetic circuits;
- logic gates and digital circuits designs;
- software development tools for the design and the characterization of QCA circuits.

Guest Editor

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Deadline for manuscript submissions

closed (15 August 2018)



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About the Journal

Message from the Editor-in-Chief

Journal of Low Power Electronics and Applications is an open access journal which provides an advanced forum for rapid dissemination of innovative research and important results in all aspects of low power electronics and design.

It publishes reviews, regular research papers and short communications. Our aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. The full experimental details must be provided so that the results can be reproduced.

Editor-in-Chief

Dr. Davide Bertozzi

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 24.2 days after submission; acceptance to publication is undertaken in 3.8 days (median values for papers published in this journal in the second half of 2025).

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