



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

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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.





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Message from the Editor-in-Chief

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Our aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. There is no restriction on the length of the papers. Full experimental and/or methodical details must be provided.

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