Aims & Scope:
Semiconductor manufacturing technology has been accompanied with rapid changes over the past decades but some applications require less power and higher speed. These issues have led researchers to find a solution or an alternative technology. Quantum-Dot Cellular Automata (QCA) is one of these candidate technologies which causes ultra-low-power and very high speed digital circuits. QCA technology offers a revolutionary approach to computing at the nano-level. This novel nano-technology has less occupied area, higher operating frequency, lower power consumption and less delay than the CMOS circuits.

Prospective authors are invited to contribute high-quality papers by the submission deadline through the online submission system. The submission of a paper implies that the paper is original and has not been submitted for review or is not copyright-protected elsewhere. All submitted papers will be refereed by experts in the field based on the criteria of originality, significance, quality, and clarity. The authors of accepted papers will have an opportunity to revise their papers and take consideration of the referees’ comments and suggestions.

Keywords: Quantum-Dot Cellular Automata, high speed digital circuits, operating frequency, power consumption.

Subtopics:
This Special Issue of “Recent Patents on Engineering” is dedicated to advances in all aspects of QCA-based digital circuits, from the basic of new logic functions and novel digital circuit designs, up to innovative layout methods, including advanced EDA tools and algorithms to support QCA designers. This special issue’s topic includes but is not limited to:

- Testing, design for testability, built-in self-test in QCA technology.
- 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;
- Area, power, and thermal analysis and design in QCA nano-technology.

Schedule:

- Peer Review Due: 15th June, 2021.
- Revision Due: 15th July, 2021.
- Final Manuscript Due: 25th September, 2021.

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