Abstract

Quantum-dot Cellular Automata (QCA) is naval technology for development of logic circuits based on nanotechnology and it is an one of the alternative for designing high performance computing over existing CMOS technology. The basic logic in QCA does not use voltage level for logic representation rather it represent binary state by polarization of electrons on the Quantum Cell which is basic building block of QCA. Extensive work is going on QCA for circuit design due to low power consumption and regularity in the circuit. Reversible logic design is a well-known paradigm in digital computation, and in this paper we are presenting the effectiveness of Reversible Universal Gate (RUG) with realization of 13 standard function and symmetric functions using RUG.

References


**Index Terms**

Computer Science  
Circuit And Systems

**Keywords**

Reversible Universal Gate  
Quantum Cell  
Quantum Dot Cellular Automata