Abstract

This paper presents the novel design of half adder and full adder using reduced number of QCA gates. This design utilizes the unique characteristics of QCA to design a half and a full adder. The basic component of QCA is a cell consisting of two electrons and four logically interacting quantum dots. Simulation indicates a fast, efficient and very attractive performance (i.e., complexity, area and delay).

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Index Terms

Computer Science

Circuits And Systems

Keywords

QCA  half adder  full adder