Abstract

Quantum dot cellular automata (QCA) shows promise as a post silicon CMOS, low power computational technology. Nevertheless, to generalize QCA for next generation digital devices, the ability to implement conventional programmable circuits based on NOR, AND and OR gates is necessary. We devise a new QCA structure, the QCA multiplier, employing the five quantum dot QCA cell. The structure can multiply two 4 bit binary number. This work is motivated by the fact that implementing combinational multiplier using QCA will reduce its area and consequently its heat dissipation. The efficacy of our framework is that it uses QCA majority gates as its primitives.

References

Realization of Combinational Multiplier using Quantum Cellular Automata

Realization of Combinational Multiplier using Quantum Cellular Automata


**Index Terms**

| Computer Science | Circuits And Systems |

**Keywords**

QCA  CMOS  multiplier