

SINGLE SPIN LOGIC BASED POWER EFFICIENT WATER DISPENSING MACHINE: DESIGN AND IMPLEMENTATION

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Abstract

In human history, no technology has become ubiquitous as rapidly as the integrated circuit. Most of us would hard press to name a house hold device that doesn't have at least one integrated IC chips in it from the stove and refrigerator to the cell phone, the thermostat and even the electric shaver. The main objective, however, remains device miniaturization to reduce unit cost per function, to improve device speed, to reduce power consumption and to improve device performance. As a consequence, the search for new principles of operation of the small size devices is becoming more and more important. Recent advances in using quantum 'spin' effect have spawned efforts in spintronics. Spintronics relies on a future of electronics known as spin, rather than the transport of electron themselves. In the present work, we want to design and realize spintronic device based VLSI chip to use as a vending machine controller IC for dispensing water as an industrial application of spin devices.

Keywords : vending machine, miniaturization, spintronics, quantum dots, controller IC

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