

## عنوان مقاله:

Stability Improvement and Consumption Power of CNTFET-based Ternary Memory Cell

## محل انتشار:

کنفرانس بین المللی پژوهش در علوم و مهندسی (سال: 1395)

تعداد صفحات اصل مقاله: 11

## نویسندگان:

Reza Azhari - Department of Electrical, Biomedical and Mechatronics Engineering, Qazvin Branch, Islamic Azad University, Qazvin, Iran

Faramarz Aghaei-liavali - Department of Electrical, Biomedical and Mechatronics Engineering, Qazvin Branch, Islamic Azad University, Qazvin, Iran

## خلاصه مقاله:

This study attempted to present a new method to implement a ternary memory cell based on carbon nanotube field effect transistor (CNTFET). Instead of using a read buffer and transmission gate, a three-state buffer is used and this decreases the cell standby power. To implement standard ternary inverter (STI) instead of using transistor with static diode connection, dynamic diode connection is applied. Based on closeness of voltage transfer characteristic of STI gate in dynamic diode to ideal point compared to static diode, cell stability is increased. Then, the proposed sample is compared with a ternary memory cell. The simulation results by HSPICE circuit simulator show that cell stability is increased by 23.03% due to using dynamic diode connection transistor and 14.36% of consumption power of storing  $-0||$  and 32.15% of consumption power of storing  $-2||$  are reduced due to using three-state buffer

## کلمات کلیدی:

Ternary, memory cell, carbon nanotube, CNTFET, Stability, Consumption Power

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/536735>

