Abstract

Energy efficiency is a supreme design concern in many ultralow-power applications. In such applications, high density Static Random-Access Memory (SRAM) plays a significant role. This paper explores and analyzes 1Mb SRAM array structures for energy efficiency improvement by adopting circuit modifications and inclusion of charge sharing circuits. The analysis shows that the array structure optimization and charge accumulator circuits can improve the energy efficiency for the same SRAM bit density and the same supply voltage.

References

- Joohee Kim, Conrad H. Ziesler, Marios C. Papaefthymiou "Energy Recovering
Energy Efficiency Enhancement for 45nm 1Mb SRAM Array Structures

Static Memory; In Proc. ISLPED, Monterey, California, USA, August 12–14, 2002

- Shunji Nakata in Recent Patents on Electrical Engineering, 2009, Vol. 2, No. 1

Index Terms

Computer Science

Circuits And Systems
Energy Efficiency Enhancement for 45nm 1Mb SRAM Array Structures

**Keywords**

Six-transistor (6T) Static Random-Access Memory (SRAM)  energy efficiency  
minimum energy

SRAM

charge-share