Abstract

In most of the digital circuits, CMOS based design is allowed to be used in practice. Generally, CMOS stands for Complementary Metal Oxide Semiconductor Field Effect Transistor, that is, considered to be as combination of both PMOS as well as NMOS. In CMOS based design, symmetry should be followed in circuit operation. Most of the complex circuits are allowed to design in CMOS, however, there are several drawbacks present in this complementary based design. Also, SRAM cell read stability and write-ability are major concerns in nanometer CMOS technologies, due to the progressive increase in intra-die variability and supply voltage scaling. Therefore, it is necessary to find alternative way suitable for particular design, instead of CMOS. Most of the modern design is based on Carbon nanotube FET or FinFET because of its superior properties interms of power consumption, leakage power, delay etc. The objective of this work mainly focus on designing 6-T SRAM cell in 32nm CMOS, CNTFET as well as FinFET and finally, to compare the parameters such as average power, delay and leakage current.

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**Index Terms**

Computer Science

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**Keywords**

Carbon nanotube  CMOS  Data Retention  FinFET  Static RAM