TITLE : Design and Simulation of Sayem Gate Using CMOS Technology in VLSI Systems

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PROBLEM STATEMENT:

Design of the low power efficient, information preserving novel reversible logic gates that can be implemented in domains like quantum computing, low power VLSI design using eSim.

ABSTRACT:

The Sayem gate is one of the novel reversible logic gates that has gained interest due to its potential in quantum computing and other advanced technologies. In this project, the Sayem gate is designed and simulated using CMOS technology within the eSIM platform, which allows for easy circuit design and testing. Reversible logic gates like the Sayem gate, Tofolli gate, Fredkin Gate and Feynman Gate are important because they preserve information during computation, unlike traditional gates where information can be lost. This makes them useful in applications where energy efficiency and data preservation are critical, such as in quantum computing.. By simulating the Sayem gate in eSIM, this project aims to explore its low power efficiency in VLSI systems and highlight its potential for improving future electronic circuits and technologies.
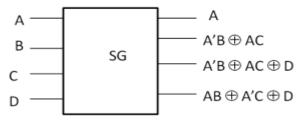
PROPOSED CIRCUIT:

Fig 9: Sayem gate

PUBLICATIONS:

1.TITLE : Boolean Low Power Logic Circuits with Reversible Gate

AUTHOR : Rajkumar Jarpula

VOLUME : Vol2, Issue 2, 2020(Page: 124,125)

REFERENCE LINK: https://www.researchgate.net/figure/Sayem-Gate-aSayem-Gate-Block-Diagram-bSayem-Gate-Truth-table-border-with-cross-mark_fig5_349377909

2.TITLE : Introduction to Reversible Logic Gates & its Application

AUTHOR : Prashant. R.Yelekar (M.Tech) ,Prof. Sujata S. Chiwande Lecturer YCCE, Nagpur

PAGE : 7

REFERENCE LINK: https://ieeexplore.ieee.org/document/9036799