

# Report 1

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**Abstract**—The abstract goes here.

**Index Terms**—1-bit Adder, Hybrid Adder, CMOS Technology,

## I. INTRODUCTION

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An XOR-XNOR-based hybrid full adder design has been proposed[1] which uses an XOR-XNOR module combined with the carry-generation module and the sum-generation module. As the designers discussed, it is a scalable and full-swing FA with some performance improvements compared with several existing state-of-the-art FAs.

in section 2, xxx will be discussed...

## II. XOR-XNOR-BASED HYBRID FULL ADDER[1]

### A. Background

The proposer of the design fist discussed how important ..

### B. Design

This FA design contains three modules to perform a 1-bit full adder operation. Firstly, an XOR-XNOR circuit will take original inputs  $A$  and  $B$  as its input and produce two signals, one is from the XNOR gate marked as  $S_{xnor\_out}$  and the other is from the XOR gate marked as  $S_{xor\_out}$ . Then, a TG-based circuit as the second module will take both signal and the input carry  $C_{in}$  to calculate the  $Sum$  while a third module will then use the  $C_{in}$  along with  $A$  and  $B$  and signals  $S_{xnor\_out}$  and  $S_{xor\_out}$  to generate the carry  $C_{out}$ .

Fig. 1 presents the block diagram of the design.

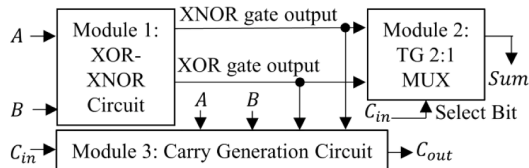


Fig. 1. Block diagram of the XOR-XNOR-based FA

### 1) XOR-XNOR Circuit Design:

## III. DESIGN B

## IV. DESIGN C

## V. DESIGN D

## VI. DISCUSSION

## VII. CONCLUSION

## REFERENCES

- [1] M. Hasan, M. S. Hussain, M. Hossain, M. Hasan, H. U. Zaman, and S. Islam, "A high-speed and scalable xor-xnor-based hybrid full adder design," *Computers and Electrical Engineering*, vol. 93, 2021.