148. Title: All-optical reconfigurable logic operations with the help of terahertz optical asymmetric demultiplexer

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Source: OPTIK

Volume:122

Issue:8

Pages: 711-718

Publication year: 2011

Document type:Journal article (JA)

Abstract: An all-optical reconfigurable logic operation essentially constitutes a key technology for avoiding complex and speed limited optoelectronics conversions and performing various processing tasks. All-optical reconfigurable logic operations with the help of terahertz optical asymmetric demultiplexer (TOAD) is proposed and described. The paper describes the all-optical reconfigurable logic operations using a set of all-optical multiplexer and optical switches. We have tried to exploit the advantages of TOAD-based switch to design an integrated all-optical circuit which can perform the different logic operations AND, XOR, NOR and NOT. Numerical simulation confirming described methods is given in this paper.