

Web of Science

Search | Search Results | My Tools | Search History | Marked List

Full Text from Publisher | Look Up Full Text | Save to EndNote online | Add to Marked List

58 of 491

20 μm long slow-light Bragg reflector waveguide modulator with over 20 GHz modulation bandwidth

By: [Gu, XD](#) (Gu, Xiaodong)^[1]; [Suzuki, A](#) (Suzuki, Ayako)^[1]; [Matsutani, A](#) (Matsutani, Akihiro)^[2]; [Koyama, F](#) (Koyama, Fumio)^[1,3]
[View ResearcherID and ORCID](#)

APPLIED PHYSICS EXPRESS

Volume: 7 Issue: 11
 Article Number: 114101
 DOI: 10.7567/APEX.7.114101
 Published: NOV 2014
[View Journal Impact](#)

Abstract

A slow-light Bragg reflector waveguide optical modulator is designed and optimized for operations with a large modulation bandwidth and ultra-low power consumption. Devices with various modulator lengths are fabricated and characterized. Extinction ratios over 15 and 30 dB are obtained with reverse bias voltages below 1 and 1.5V, respectively. In a 20 μm long modulator, a 3 dB modulation bandwidth exceeds 20 GHz with a bias voltage of only -600 mV. The total energy consumption of the modulator is estimated to be lower than 100 fJ/bit, including both the load and dynamic power dissipations. (C) 2014 The Japan Society of Applied Physics

Keywords

KeyWords Plus: LOW-DRIVING-VOLTAGE; ELECTROABSORPTION MODULATORS; HIGH-SPEED; INTERCONNECTS; VCSEL

Author Information

Reprint Address: Gu, XD (reprint author)

+ Tokyo Inst Technol, Photon Integrat Syst Res Ctr, Precis & Intelligence Lab, Yokohama, Kanagawa 2268503, Japan.

Addresses:

+ [1] Tokyo Inst Technol, Photon Integrat Syst Res Ctr, Precis & Intelligence Lab, Yokohama, Kanagawa 2268503, Japan

+ [2] Tokyo Inst Technol, Semicond & MEMS Proc Ctr, Yokohama, Kanagawa 2268503, Japan

+ [3] King Abdulaziz Univ, Fac Sci, Dept Phys, Jeddah 21589, Saudi Arabia

E-mail Addresses: gu.xiaodong@ms.pi.titech.ac.jp

Funding

Funding Agency	Grant Number
JSPS KAKENHI	S22226008
New Energy and Industrial Technology Development Organization (NEDO) in Japan	

[View funding text](#)

Publisher

IOP PUBLISHING LTD, TEMPLE CIRCUS, TEMPLE WAY, BRISTOL BS1 6BE, ENGLAND

Categories / Classification

Citation Network

0 Times Cited
 27 Cited References
[View Related Records](#)
[Create Citation Alert](#)

(data from Web of Science Core Collection)

All Times Cited Counts

0 in All Databases
 0 in Web of Science Core Collection
 0 in BIOSIS Citation Index
 0 in Chinese Science Citation Database
 0 in Data Citation Index
 0 in Russian Science Citation Index
 0 in SciELO Citation Index

Usage Count

Last 180 Days: 1
 Since 2013: 10
[Learn more](#)

This record is from:

Web of Science Core Collection
 - Science Citation Index Expanded

Suggest a correction

If you would like to improve the quality of the data in this record, please [suggest a correction](#).

Research Areas: Physics

Web of Science Categories: Physics, Applied

Document Information

Document Type: Article

Language: English

Accession Number: WOS:000346119500032

ISSN: 1882-0778

eISSN: 1882-0786

Journal Information

Table of Contents: [Current Contents Connect](#)

Impact Factor: [Journal Citation Reports](#)

Other Information

IDS Number: AW2LO

Cited References in Web of Science Core Collection: **27**

Times Cited in Web of Science Core Collection: **0**