Polarization-insensitive optical modulators

Overview

Polarization-insensitive optical modulators allow an external laser to be remotely interconnected by single-mode optical fibers while avoiding polarization controllers, which would be convenient and cost-effective for co-packaged optics, 5G, and future 6G applications. We demonstrate a polarization-insensitive electro-optic (EO) modulator based on x-cut thin-film lithium niobate (TFLN), employing capacitively loaded traveling-wave (CLTW) electrodes on an undercut-etched silicon substrate. The inverted U-shaped structure enables the synchronous control of TE/TM modes via Fermi level tuning, achieving a maximum attenuation of 0. 3 eV) and a. Phase modulators are commonly used devices in optics. Here, we propose a hybrid graphene-silicon-based polarization-insensitive electro-absorption. Abstract: By exploiting the electroabsorption effect of gra-phene, we present a graphene-based polarization-insen-sitive optical modulator. The waveguide structure consists of a silica substrate, high-index silicon strip waveguide, Si3N4 dielectric spacer, two graphene layers, and two metal.

Article Content

Polarization-insensitive silicon intensity modulator with a maximum ...

Polarization-insensitive optical modulators allow an external laser to be remotely interconnected by single-mode optical fibers while avoiding polarization controllers, which would be convenient and ...

Polarization-Insensitive Electro-Optic Modulator for the Terahertz ...

In this work, we propose a polarization-insensitive EO modulator operating in the terahertz frequency range based on a graphene-hybrid plasmonic waveguide. Unlike conventional ...

Hybrid Graphene-Silicon Based Polarization-Insensitive Electro ...

Polarization-insensitive modulation, i.e., overcoming the limit of conventional modulators operating under only a single-polarization state, is desirable for high-capacity on-chip optical interconnects.

Polarization-insensitive wide-angle resonant acousto-optic phase ...

In this study, we demonstrate the feasibility of constructing free-space resonant phase modulators with a broad acceptance angle and minimal dependence on the polarization state of light using an acousto ...

Design of graphene-based polarization-insensitive optical modulator

In summary, we have proposed and designed a graphene-based polarization-insensitive optical modulator consist-ing of a silica substrate, high-index Si strip waveguide, Si3N4 dielectric spacer, ...

Polarization-insensitive electro-optic modulator based on thin-film ...

We demonstrate a polarization-insensitive electro-optic (EO) modulator based on x-cut thin-film lithium niobate (TFLN), employing capacitively loaded traveling-wave (CLTW) electrodes on ...

Polarization-Insensitive Electrooptic Modulation on Anisotropic Thin ...

Here, we propose an innovative approach to mitigate the modulation polarization dependence of thin-film LN.

Polarization-insensitive electro-optic mach-zehnder modulator on thin ...

The simulation results show identical modulation efficiency and comparable insertion loss for both polarization states. The proposed modulator is well-suited for optical communication systems and ...

Polarization-Insensitive Michelson Interferometer Modulator Based on ...

Integrated lithium niobate electro-optic modulators are emerging for applications in next-generation optical fiber communication networks. In this work, we demo.

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For more information, pricing, or custom solutions, please contact us:

Website: https://automationauthoritysolar.co.za
Email: info@automationauthoritysolar.co.za
Phone: +27 82 547 3961
Address: 15 Quantum Street, Technopark, Centurion, 0157, South Africa

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