Silicon Photonic Modulator Design

This paper presents a circuit-level programmable modulator design that addresses these challenges. The proposed modulator can generate both intensity and phase modulation, optimizing performance ...

Herein, an overview of current silicon modulator types and modern integration approaches is presented including direct bonding methods and micro ...

Emphasis is placed on silicon photonics for its scalability, cost-effectiveness, and CMOS compatibility. The review also discusses hybrid platforms, slow light-based modulators, and emerging technologies ...

Abstract: The design and characterization of a slow-wave series push-pull traveling wave silicon photonic modulator is presented. At 2 V and 4 V reverse bias, the measured -3 dB...

The present article introduces an electro-optic modulator based on silicon photonics, specifically designed for integration with CMOS (Complementary Metal-Oxide-Semiconductor) ...

Our study focuses on a high-performance silicon photonic suppressed-carrier single-sideband (SC-SSB) modulator at 1560 nanometers, capable of dynamic frequency shifting within the ...

Building on the slow-light effect and theoretical analysis, we design and fabricate a PCNC-based EO modulator in a standard silicon photonic commercial CMOS-compatible foundry.

Herein, an overview of current silicon modulator types and modern integration approaches is presented including direct bonding methods and micro-transfer printing.

Fig. 1: Schematic of the programmable modulator. The embedded high-speed modula-tor can be travelling wave pn modulator, SiGe EAM modulator, microring modulator, and other modulators

By comprehensively balancing several factors including the group index, photon lifetime, electrical bandwidth, and losses, we design and fabricate the silicon modulators using the standard ...

While modulators generally come in two categories, direct absorption and those relying on embedded phase shifters, the focus of this paper lies on the latter capable of supporting both complex-valued ...

The focus of our study is to provide a comprehensive review of contemporary (i.e., plasma dispersion modulators) and new modulator implementations that involve the integration of ...

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