

Fabrication of Planar Waveguide Beam Splitter



Overview

The design and structural optimization of the 1×2 POF splitter are simulated by the beam propagation method (BPM). We fabricated the device through a low-cost manual assembly process, followed by packaging and experimental characterization. To address the demand for low-cost, low-loss, and environmentally friendly optical power dividers in short-range visible light communication (VLC) systems, a low-loss 1×2 Y-branch optical splitter based on the integration of a planar optical waveguide (POW) and plastic optical fiber (POF) is. We developed planar beamsplitter integrated with an Er-doped waveguide amplifier to compensate for the loss of the beamsplitter. In thin-film waveguide, a vertical dimension is determined by an Er-doped layer thickness, whereas a lateral dimension is defined by a patterning process that usually. Efficient beam splitters in a planar photonic crystal waveguide with corrugated terminators were designed, fabricated, and characterized. Experimental results showed that these beam splitters have high splitting efficiency and power intensity in the propagation direction, an achievement made. We report about design, fabrication and optical properties of large core multi-mode optical polymer splitter for visible and infrared spectral region. Splitter chips were then fabricated by using the.

Article Content

A planar waveguide beam splitter

A 50:50 beam splitter for the light and matter waves based on a planar waveguide is studied. The light version of such a beam splitter is demonstrated experimentally. Applications of such a beam splitter

Silicon nano-bridge waveguide assisted polarizing beam splitter

And a polarizing beam splitter based on resonant coupling between the nano-bridge and strip waveguides is proposed here to improve the fabrication tolerance while maintaining a low

Fabrication of Planar Waveguide Chip for Splitting or Combining an ...

Based on hybrid materials of polymethacrylate, silica and zirconia (ASZ)/Titania (AST), some planar structures of optical power splitter/combiner type $1 \times N$ channels were designed

Planar-type polarization beam splitter based on a bridged silicon ...

TL;DR: A high-performance silicon-based polarizing beam splitter is proposed and demonstrated experimentally by using an improved structure with cascaded bent directional couplers

Fabrication of planar beamsplitter integrated with Er-doped waveguide ...

We have developed a new fabrication process for Er-doped 2D waveguides. The process does not require etching of an Er-doped film, and therefore is simple, economical, and highly reproducible in

Design and Analysis of a Low-Loss 1×2 POF Splitter Based on

The POW splitter is made using a simple manual process combined with ultraviolet (UV) curing. This method lowers fabrication cost and maintains stable optical performance. In this paper,

Ultra-compact asymmetric polarization beam splitter based on hybrid ...

In this work, we propose ultra-compact and ultra-wide bandwidth polarization beam splitter (PBS) by inverse design method on a standard silicon-on-insulator platform. The structure of the PBS

A planar waveguide beam splitter | Request PDF

A 50:50 beam splitter for the light and matter waves based on a planar waveguide is studied. The light version of such a beam splitter is demonstrated experimentally. Applications of

Broadband Planar Waveguide Power Splitter Based on Symmetrical S

In this paper, a wavelength insensitive optical beam splitter is modeled using beam propagation method

Planar n-fold Beam Splitter Based on Adiabatic Light

We propose and describe mode converter/splitter based on optical analogy of multistate stimulated Raman adiabatic passage in multimode

A planar waveguide beam splitter

In this paper an optical beam splitter based on a planar waveguide formed by two nontransmitting mirrors is discussed, and the extension to atom optics described.

Design and analysis of 2D one-way splitter waveguide based on

Theoretical analysis In this paper, we propose a one-way T-shaped splitter waveguide with a tunable resonator at the cross, using the magneto-optical properties of the rods and the tailored ...

Ultra-broadband and compact polarizing beam splitter in silicon

Abstract: We design and experimentally demonstrate a polarizing beam splitter (PBS) on a silicon-on-insulator (SOI) platform based on an asymmetric directional coupler. The asymmetric directional

Design and simulation of a compact and ultra-wideband polarization beam ...

Fig. 1 a Schematic view of an MMI-based beam splitter, b cross-sectional view of the strip waveguide, c effective refractive index of the TE and TM modes of the input/output waveguides (inset presents the

Planar Waveguide Polarization Beam Splitter Based on

A novel polarization beam splitter is designed on a slab waveguide platform where light is vertically confined. Planar lenses are formed to collimate and refocus a light beam by converting the ...

Design and analysis of 2D one-way splitter waveguide based on

We present a new high-efficiency splitter waveguide design based on photonic topological insulators. The system's robust edge states allow electromagnetic waves to propagate in the 2D...

Fabrication of Low-Cost Planar Waveguide Power

The beam propagation method is applied for the analysis of the rib waveguide Y-branch optical power splitter. It is inferred from this analysis that

A Planar Beam Splitter for Millimetre and Sub-Millimetre Heterodyne ...

Abstract—We present the design of a four-port planar circuit beam splitter comprising a microstrip and a coplanar waveguide (CPW) crossing each other. The CPW is fabricated in the ground plane (bottom

Design and fabrication of high-efficiency photonic crystal power beam ...

Efficient beam splitters in a planar photonic crystal waveguide with corrugated terminators were designed, fabricated, and characterized.

Large core optical planar splitter for visible and infrared region

We report about design, fabrication and optical properties of large core multi-mode optical polymer splitter for visible and infrared spectral region. The splitters were designed by beam propagation

An optical splitter with super multi-channels based on planar waveguide ...

In this paper, we proposed an optical splitter planar waveguide design with super multi channels. The design utilizes the wavefront interference and spatial filtering theory. The DC and AC

A compact polarization beam splitter based on an array of ...

Abstract In this paper a compact polarization beam splitter is proposed. The splitter consists of an array of four rectangular waveguides in a metal slab. The waveguides are designed to allow only the TE_{1,0}

Waveguide shape and waveguide core size optimization of Y-branch ...

Splitting and combining of multiple optical beams plays an important role in photonic technologies , . A passive optical splitter is a planar waveguide structure that divides the light

Fabrication process of the multimode optical waveguides using...

The paper reports on the fabrication and characterisation of the hybrid polymer multimode optical channel waveguides that have been used for core layers, namely OrmoClear®FX and OrmoCore.

Planar-type polarization beam splitter based on a bridged silicon ...

Request PDF | Planar-type polarization beam splitter based on a bridged silicon waveguide coupler | We demonstrate a compactly integrated polarization beam splitter (PBS) with

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