

Phase Mask Etching of Fiber Gratings





Overview

Improved Phase-Mask Fabrication of Fiber Bragg Gratings An improved method of fabrication of Bragg gratings in optical fibers combines the best features of two prior methods: one that involves the use of a phase mask and one that involves interference between the two. We present to the best of our knowledge the first example of femtosecond laser inscription/ablation of phase/amplitude masks for the demonstrated purpose of inscribing Bragg gratings in optical fibers. The phase mask technique used for writing fiber gratings has the advantages over the traditional holographic method because of its.



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Phase grating masks for photonic integrated circuits fabricated by e

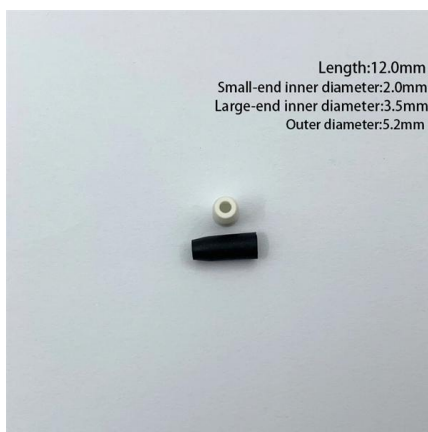
This technique is especially attractive for use in OEICs and PICs when fabrication of the grating masks is accomplished with e-beam lithography and dry etching, since the diffractive

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Phase Mask

A phase mask is defined as a relief grating etched in a UV-transmitting silica plate, used in transmission to diffract an incident UV beam into multiple orders, facilitating the inscription of fiber

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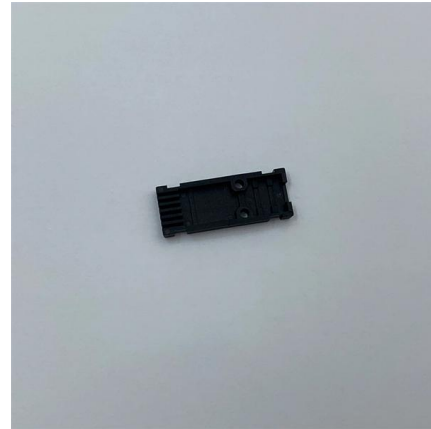
Fabrication of multiple fiber-Bragg gratings on one SMF using a single

Among others, the phase-mask technique is widely used for fiber Bragg grating fabrication due to its simplicity and suitability for mass production. The fixed pitch of the phase-mask imposes limitations

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Fabrication of phase masks, for fiber grating printing, using EBL and

This paper reports on the fabrication process of phase mask for fiber grating printing. The masks are produced by Electron Beam Lithography (EBL) and Reactive Ion Etching (RIE). A special



Femtosecond laser inscribed phase masks for fibre Bragg grating

K. O. Hill, B. Malo, F. Bilodeau, D. C. Johnson, and J. Albert, "Bragg gratings fabricated in monomode photosensitive optical fibre by UV exposure through a phase mask", Applied Physics Letters, 62 (10),

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Demonstration of inscription and ablation of phase masks for the

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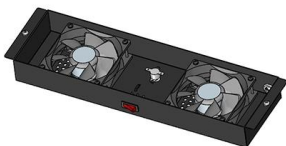
Focus creates quality products



Phase mask for fabrication of fiber Bragg gratings by femtosecond laser

Using a fused silica phase mask in a 520 nm wavelength femtosecond laser with a period of 1 067 nm, a ruled area 40 mm×30 mm was fabricated via holographic lithography-ion beam etching.

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Fabrication of Phase Mask for Optical Fiber Grating

A fused silica phase mask with the period of 1069nm, and ruled area 50×50mm² has been fabricated by a new technique, which combines holographic-ion beam etching and reactive ion beam etching. This

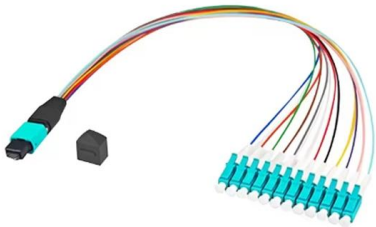
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(PDF) Bragg grating inscription in various optical fibers

Since its demonstration in 2003, Bragg grating inscription with high-power femtosecond pulse duration infrared sources and phase masks has proven

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A phase mask fiber grating and sensing applications

This paper presents an investigation of a fabricated fiber grating device characteristics and its applications, using a phase mask writing technique. The

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Design and fabrication of a novel phase mask to inscribe fiber Bragg

Abstract: A novel phase mask (PM) consisting of overlapped regions of more than one uniform pitch is fabricated using e-beam lithography. Design, fabrication of PMs, and filter characteristics are presented.

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Electron beam lithography of phase mask gratings for near field

This paper reports on processing methods used to produce phase masks for near field holographic writing of fibre gratings. The masks are produced using e-beam lithography (EBL) and

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Our grating products today include phase masks, telecom gratings, pulse compression gratings and spectrometer gratings. By combining unique optical

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Femtosecond written phase-shifted-gratings and fiber Bragg gratings

Phase-shifted-gratings and arrays of fiber-Bragg-gratings are inscribed with a uniform phase-mask. These gratings are inscribed with 800 nm femtosecond pulses and a uniform phase-mask where the

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Optimal phase mask for fiber Bragg grating fabrication

A photolithographic method is described for fabricating refractive index Bragg gratings in photosensitive optical fiber by using a special phase mask

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Design and fabrication of a novel phase mask to inscribe fiber Bragg

A novel phase mask (PM) consisting of overlapped regions of more than one uniform pitch is fabricated using e-beam lithography. Design, fabrication of PMs, and filter characteristics are presented.

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(PDF) Fabrication of fiber grating by phase mask and its

The phase mask technique used for writing fiber gratings has the advantages over the traditional holographic method because of its simpler writing setup and more

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Fabrication of high-reflectivity fiber Bragg gratings by excimer laser

This paper reports the experimental results that near 100% peak reflectivity fiber Bragg grating have been fabricated by 248 nm KrF excimer laser irradiated a B/Ge co-doped fiber through a zero-order

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Grating-inscription technique eliminates need for fiber

Bragg gratings written directly through the polymer coatings of optical fibers with femtosecond IR lasers and a phase mask result in devices with

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(PDF) Phase grating masks for photonic integrated circuits fabricated

This paper reports on processing methods used to produce phase masks for near field holographic writing of fibre gratings. The masks are produced using e-beam lithography (EBL) and reactive ion

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Fiber Bragg Grating with Enhanced Cladding Modes

In this paper, we demonstrate a fiber Bragg grating (FBG) with a wide range and a comb with continuous cladding mode resonances inscribed in non

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5. Phase-mask technique for fiber Bragg grating fabrication.

Figure 2.5 illustrates the most widely used phase-mask technique to inscribe a BG in an optical fiber , using a diffractive optical component (a transmission

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Research on phase mask method-based phase-shifted fiber grating

In this work, a simple phase-shifted fiber grating (PSFG) inscription technique based on screening method was demonstrated, in which a standard single-mode fiber (SMF) is irradiated by

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Growth dynamics and characteristics of fabricated Fiber Bragg Grating

Abstract In this paper, Fiber Bragg Gratings (FBGs) are written by photoinduced refractive index changes in optical fibers. Experimental setup and results are presented to show the growth



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A fiber grating preparation method: Drawing tower grating by single

The first to achieve good commercialization of DTG technology from FBG manufacturing to FBG engineering applications. A method of on-line dynamic preparation of drawing tower grating

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An improved method of fabrication of Bragg gratings in optical fibers combines the best features of two prior methods: one that involves the use of a phase mask and one that involves interference between

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