Budowa Silesia Photonics

Fiber Bragg Grating Metallization

Overview

We present a method for metal coating optical fiber and in-fiber Bragg grating. The fiber is firstly coated with a thin copper or nickel plate with electroless. In this study, the fiber Bragg grating (FBG) was metallized with a nickel coat using an electroless-electro plating method. Under the optimum conditions, the surface of chemical plating and electroplating coat are smooth and compact, there is not any visible defect in the cross-section. In each experiment, the plating thickness and the corresponding. Fiber Bragg Gratings: Theory, Fabrication, and Applications This Tutorial Text delivers essential information concerning fiber Bragg gratings to professionals and researchers with an approach based on rules of thumb and practical aspects, enabling quick access to the main principles and techniques. A fiber Bragg grating (FBG) is a type of distributed Bragg reflector constructed in a short segment of optical fiber that reflects particular wavelengths of light and transmits all others.

Article Content

Functional Coatings for Fiber Bragg Gratings: A Critical Review of ...

Practical metallization and re-coating procedures tailored to fibers are discussed in more detail later in the manuscript, and additional methods are cataloged in foundational surveys . ...

Fiber Bragg grating

A fiber Bragg grating (FBG) is a type of distributed Bragg reflector constructed in a short segment of optical fiber that reflects particular wavelengths of light and transmits all others.

A study of the temperature sensitivity of fiber Bragg gratings after ...

Experiments using electroless plating of a nickel-clad fiber Bragg grating (FBG) have been carried out four times in order to learn its temperature sensitivity and the relationship between temperature ...

Fiber Bragg Gratings with Micro-Engineered Temperature Coefficients ...

Fiber Bragg gratings (FBGs) are ubiquitous as sensors for a range of parameters and also as optical components in telecommunications systems. However, their temperature dependence ...

Sensing characteristics of low-loss metallized fiber Bragg grating by ...

<sec><title>Objective</title><p>Fiber Bragg grating (FBG) is widely used in the structural health monitoring of military industry, water conservancy, aerospace and other fields. FBG needs to be fixed ...

A plating method for metal coating of fiber Bragg grating

We present a method for metal coating optical fiber and in-fiber Bragg grating. The technology process which is based on electroless plating and electroplating method is described in detail.

Highly-sensitive fiber Bragg grating temperature sensors with metallic ...

Four kinds of metal coatings were prepared on the surface of the optical fiber by chemical deposition and electroplating, and the grating was directly written by femtosecond laser. The thermal ...

Metal coating of fiber Bragg grating and the temperature sensing ...

In this study, the fiber Bragg grating (FBG) was metallized with a nickel coat using an electroless-electro plating method. Under the optimum conditions, the surface of chemical plating and...

Fiber Bragg Gratings: Theory, Fabrication, and Applications

The following chapters outline the operation of Bragg gratings and, for instance, discuss how measurement information can be retrieved (interrogation techniques), calibration methods, and how ...

Development of metallized three-directional fibre Bragg grating strain ...

The theory and application of fiber Bragg grating sensors are studied in this paper. The three-directional metallized fiber Bragg grating strain sensor with temperature compensation has ...

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