

Fiber Bragg Grating Anemometer

A sensitivity-enhanced hot-wire anemometer based on a cladding-etched optical fiber Bragg grating (FBG) coated with a layer of silver film and ...

Abstract: A compact all-fiber optical anemometer based on a fiber Bragg grating inscribed in a metal-filled microstructured optical fiber (MOF) is presented.

Abstract: A fiber-optic anemometer based on fiber Bragg gratings (FBGs) is presented. A short section of cobalt-doped fiber was utilized to make a fiber-based "hot wire" for wind speed measurement.

A novel fiber anemometer based on two pairs of fiber gratings is experimentally demonstrated and can simultaneously detect wind speed and wind direction. One pair of gratings, which are separated by ...

A compact and low-power consuming fiber-optic anemometer based on single-walled carbon nanotubes (SWCNTs) coated tilted fiber Bragg grating (TFBG) is presented.

A sensitivity-enhanced hot-wire anemometer based on a cladding-etched optical fiber Bragg grating (FBG) coated with a layer of silver film and optically heated by using a 1480 nm laser ...

A high sensitivity fiber Bragg grating (FBG) hot-wire anemometer is achieved by using a surface-frosted and silver-coated FBG. Sensitivity enhancement up to 313% is achieved when compared with that of ...

Due to its high repeatability and stability, the phase mask writing technique is commonly used for fabricating fiber gratings. It employs a 248 nm KrF excimer laser as the writing light source.

A hot-wire anemometer is proposed based on a frosted fiber Bragg grating (FBG) coated with silver film assisted by a lumbar-enlarged optical fiber taper. A 1480 nm pumping light with a maximum output ...

Because an FBG is the key component of the proposed fiber anemometer, the sensing mechanism is based on the strain induced by the wind force, which causes a grating wavelength shift.

Table 1 shows the performance comparison of our surface-frosted FBG anemometer with some reported optical fiber anemometers. It can be seen that both the sensitivity and measurement ...



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