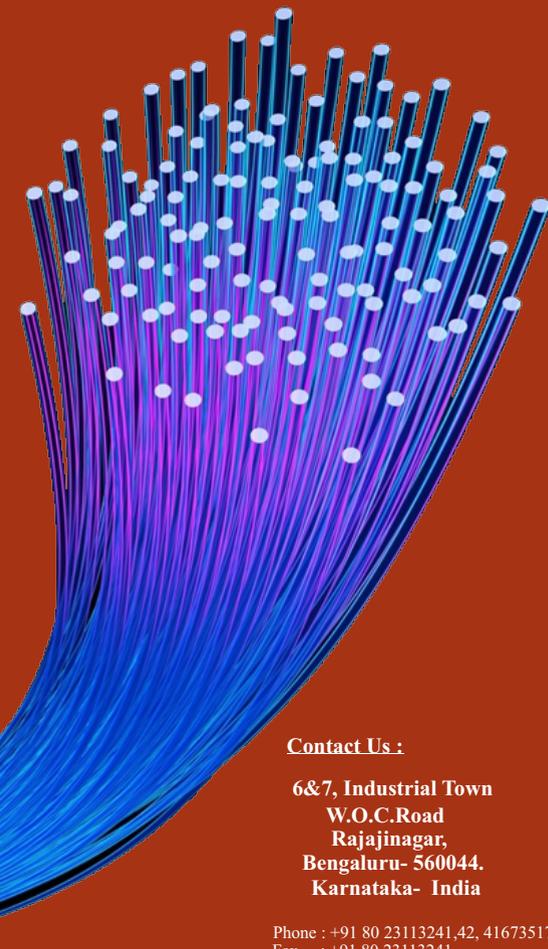




info@fiberoptika.com
www.fiberoptika.com
Follow us on:  

FBG

Fiber Bragg Grating Fabrication Set-up



Fiber Optika Pvt Ltd is proud to announce our next big leap in fiber optics and present an indigenous FBG fabrication set up. We would also like to inform that the company has enough expertise and experience in building and handling a standalone optical laboratory along with FBG fabrication facility.

Contact Us :

6&7, Industrial Town
W.O.C.Road
Rajajinagar,
Bengaluru- 560044.
Karnataka- India

Phone : +91 80 23113241,42, 41673517
Fax : +91 80 23113241

Fiber Bragg Grating is a periodic or a quasi periodic perturbation of the refractive index in the core of an optical fiber along its length and is formed by exposure of the single mode optical fiber to an intense optical interference pattern.

According to Bragg's law,

$$\lambda_B = 2n_{eff} \cdot \Lambda$$

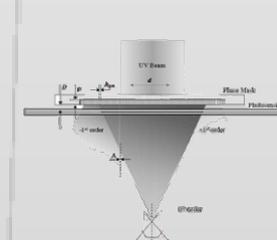
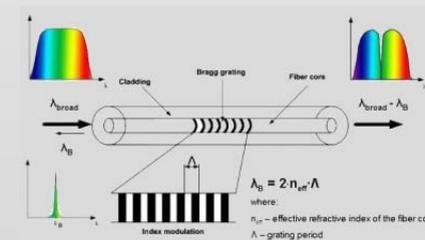
Where, λ_B is the Bragg wavelength reflected by the grating, n_{eff} is the effective refractive index of the fiber core and is the perturbation period. The period and length of the grating along with the magnitude of modulation of the refractive index, determine the reflectivity of the grating. When a broadband source of light is launched into the fiber, grating portion reflects a narrow spectral band of certain wavelength, known as the Bragg wavelength, which is dependent on the grating period and effective refractive index of the fiber.

FBGs have seen an ever increasing commercial growth in recent past both in telecommunication & sensing applications. In spite of heavy maturity and great potential of FBGs, the non-availability of single turn-key type of ready solution for FBG fabrication facility in the market is still constraint for the practical applicability and growth of FBGs in photonics community. In this regard technical staff of Fiber Optika Pvt.Ltd. is all set to fill this void and assure to be with you starting from answering all your queries till providing every possible solution to have your own fabrication facility.

FBG's have been majorly used in following areas of Telecommunications and Sensors

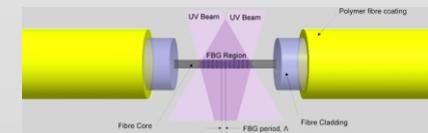
Telecommunications

- Fiber Lasers
- Fiber Amplifiers
- Fiber Filters
- Dispersion Compensators
- Optical Fiber Phase Conjugator
- WDM



Sensors

- Strain Sensors
- Temperature Sensors
- Chemical Sensors
- Accelerometers
- Displacement Sensors
- Gas Sensors
- Bio-Molecule Sensors



Advantages

- Greatly increased bandwidth and capacity
- Lower signal attenuation (loss)
- Immunity to electrical Noise
- Lower bit error rates
- Difficult to tap (Signal Security)
- Nonconductive and free from short circuit and sparks
- Small sensor size and low sensor weight
- Resistant to radiation and corrosion
- High tensile strength
- Improved ruggedness and flexibility
- Lower installation/sensor cost

Various Applications of FBG sensors

- Civil Engineering and Infrastructure
Bridges
Buildings and Other Structures
Tunnels and Roads
- Aerospace Engineering
- Bio Engineering
- Medical and Spots Engineering
- Marine Engineering
- Geo Engineering