

Photonic Crystal Fibre (PCF)

Description

PCF, also known as holey fibre or microstructured fibre, normally consists of a regular pattern of air holes or doped materials inside pure silica background along the transverse direction. According to the mechanism of light guided in fibre core, PCF is classified as TIR and PBG. Stacking and drawing technique are used for the preparation of our PCFs to realize special characteristics such as endless single mode, extremely large mode area, wave-guide in hollow core, high nonlinear effects and birefringence etc.

YOFC has developed a series of PCFs for all kinds of applications based on our synthetic material, PCVD process, stacking-drawing technique and theoretical simulation.

Applications

- Supercontinuum light source
- Fibre lasers and amplifiers
- High power transmission
- Fibre gratings and sensors
- All optical signal process

Characteristics

YOFC photonic crystal fibre has following characteristics compared with similar fibre:

- Low loss
- Uniform along long fibre length
- Fine microstructure, excellent characteristics performance of specific fibre type
- Single material, high purity silicon dioxide (except all solid photonic bandgap fibre)

Standard Products

- Endlessly single mode photonic crystal fibre
- Polarization maintaining photonic crystal fibre
- High nonlinearity photonic crystal fibre
- All solid photonic bandgap fibre
- Two core fibre

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More information of YOFC PCFs is listed in table below.

Main Classes	Subclasses	Attributes	Fibre Structure	Application Examples
Total Internal Reflection (TIR)	Endlessly Single-Mode Fibre			Energy delivery
	High Nonlinearity Fibre	950–1100nm ZDW		Supercontinuum generation by 1µm pulse laser or CW laser
		700–900nm ZDW		Supercontinuum generated by 0.8µm fs pulse laser; Nonlinearity optics; Nonlinearity fibre laser
		Dispersion Flat		
	Multi-core Fibre	Dual Core		Directional coupling components; Interferometer
	PM Fibre			Gyro; Interferometer
Photonic Bandgap (PBG)	All-solid Bandgap Fibre	Tailored Bandgap Spectrum		Special dispersion and operating wavelength fibre