

# Photonic Crystal Fiber (PCF)

## Description

Photonic Crystal Fibre, also known as microstructure fiber or holey 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, PCF is classified as TIA and PBG. Stacking and drawing technique are used for preparation for 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.

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

## Characteristics

- Low loss
- Uniform along fibre length
- Fine microstructure, excellent characteristics performance of specific fiber type
- Single material composition, namely high purity SiO<sub>2</sub> (except all solid photonic band gap fiber)








## Application

- Supercontinuum sources
- Optical fibre laser and amplifier
- High power transmission
- Optical fibre grating and sensors
- All optical signal processing

## Standard Products

- Endless single-mode PCF
- Polarization maintaining PCF
- High nonlinearity PCF
- All solid PBG
- Dual core fiber

## Photonic Crystal Fibre (PCF)

Main Classes	Subclasses	Attributes	Fibre Structure	Application Examples
Total internal reflection (TIR)	Endlessly single-mode fibre	Pure silica core; Attenuation can be as low as 1 db/km		Wide single-mode transmission 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
		Flattened Dispersion		
	Multi-core fibre	dual core		Sensor, Directional coupling components ;
PM fibre			Gyro; interferometer	
Photonic bandgap (PBG)	All-solid photonic Bandgap fibre	tailored bandgap spectrum		Filtering; Special rare earth doped fibre; Special dispersion and operating wavelength fibre