



## Photonic Crystal Fibre (PCF)

Photonic crystal fibre, also known as microstructure fibre 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 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.

## Characteristics

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


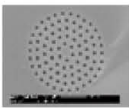
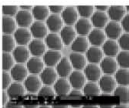
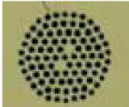

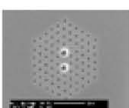

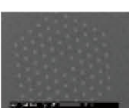
## Applications

- Super-continuum 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 PCF

## Specifications

Main Classes	Subclasses	Fibre Type	Part No.	Attributes	Fibre Structure	Application Examples
Total internal reflection (TIR)	Endless single-mode PCF	PC SM	PC1010-A	Pure silica core; Attenuation can be as low as 1 dB/km		Wide single-mode transmission Energy delivery
	High nonlinearity PCF	PC HNL	PC1011-A	950-1100nm ZDW		Supercontinuum generation by 1µm pulse laser or CW laser
				700-900nm ZDW		Supercontinuum generation by 0.8µm fs pulse laser Nonlinearity optics Nonlinearity fibre laser
	Multi-core PCF	PC DC	PC1012-A	Dual core		Senor Directional coupling components
		PC 7C	PC1012-B	Seven-core		Supercontinuum generation Nonlinearity optics
	Polarization maintaining PCF	PC PM	PC1013-A	Excellent radiation resistance, temperature insensitive, low mac- ro-bending induced attenuation		Gyro; Interferometer
	Passive double cladding PCF	PC PDC	PC1015-A	Pure silicon core, large mode field		Single mode pulsed laser transmission; Spectroscopy research
Photonic bandgap (PBG)	All solid PBG	PC ASPBG	PC1014-A	Tailored bandgap spectrum		Filtering Special rare earth doped fibre Special dispersion and operating wavelength fiber

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