

Photonic Crystal Fibers

[DOWNLOAD HERE](#)

Preface. Acknowledgements. Introduction.- 1. Basics of photonic crystal fibers. 1.1 From conventional optical fibers to PCFs. 1.2 Guiding mechanism. 1.2.1 Modified total internal reflection. 1.2.2 Photonic bandgap guidance. 1.3 Properties and applications. 1.3.1 Solid-core fibers. 1.3.2 Hollow-core fibers. 1.4 Loss mechanisms. 1.4.1 Intrinsic loss. 1.4.2 Leakage loss. 1.4.3 Bending loss. 1.5 Fabrication process. 1.5.1 Stack-and-draw technique. 1.5.2 Extrusion fabrication process. 1.5.3 Microstructured polymer optical fibers. 1.5.4 OmniGuide fibers. 1.6 Photonic crystal fibers in the market. Bibliography.- 2. Guiding properties. 2.1 Square-lattice PCFs. 2.1.1 Guidance. 2.1.2 Cut-off. 2.2 Cut-off of large mode area triangular PCFs. 2.3 Hollow-core modified honeycomb PCFs. 2.3.1 Guidance and leakage. 2.3.2. Birefringence. Bibliography.- 3. Dispersion properties. 3.1 PCFs for dispersion compensation. 3.2 Dispersion of square-lattice PCFs. 3.3 Dispersion-flattened triangular PCFs. 3.3.1 PCFs with modified air-hole rings. 3.3.2 Triangular-core PCFs. Bibliography.- 4. Nonlinear properties. 4.1 Supercontinuum generation. 4.1.1 Physics of supercontinuum generation. 4.1.2 Highly nonlinear PCFs. 4.1.3 Dispersion properties and pump wavelength. 4.1.4 Influence of the pump pulse regime. 4.1.5 Applications. 4.2 Optical parametric amplification. 4.2.1 Triangular PCFs for OPA. Dispersion and nonlinear properties. 4.2.2 Phase-matching condition in triangular PCFs. Optical parametric gain in triangular PCFs. 4.3 Nonlinear coefficient in hollow-core PCFs. Bibliography.- 5. Raman properties. 5.1 Raman effective area and Raman gain coefficient. 5.2 Raman properties of triangular PCFs. 5.2.1 Silica triangular PCFs. 5.2.2 Tellurite triangular PCFs. 5.2.3 Enlarging air-hole triangular PCFs. 5.3 Raman properties of honeycomb PCFs. 5.4 PCF Raman amplifiers. 5.4.1 Model for PCF Raman amplifiers. 5.4.2 Triangular PCF Raman amplifiers. 5.5 Impact of background losses on PCF Raman amplifiers. 5.6 Multipump PCF Raman amplifiers. Bibliography.- 6. Erbium-doped fiber amplifiers. 6.1 Model for doped-fiber amplifiers. 6.2 EDFA based on honeycomb and cobweb PCFs. 6.3 EDFA based on triangular PCFs. Bibliography- A. Finite Element Method. A.1 Formulation. A.2 PCF parameter evaluation. Bibliography. EAN/ISBN : 9781402063268 Publisher(s): Springer Netherlands, Springer, New York Format: ePub/PDF Author(s): Poli, Federica - Cucinotta, Annamaria - Selleri, Stefano

[DOWNLOAD HERE](#)

Similar manuals:

[Photonic Crystal Fibers](#)