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List of symbols

Symbol	Meaning
n_1	The fiber core refractive index
n_2	The fiber cladding refractive index
θ_c	The critical angle of reflection
Δ	Relative core – cladding index difference
V	Parameter determines the number of modes supported by the fiber
λ	Pulse wavelength
K	Wavenumber
β	Propagation constant
k_0	Free space Propagation constant
Λ	the inter hole spacing
c	speed of light in vacuum
a	the core radius
$n_c(\lambda)$	The effective index of the fundamental space filling mode.
E	Electric field
H	Magnetic field
B	magnetic induction field
D	electric displacement
P	the induced electric polarization
ϵ_0	vacuum permittivity
Symbol	Meaning

μ_0	vacuum permeability
$E(r,t)$	A slowly varying complex envelope
\hat{x}	the polarization unit vector
ω_0	an angular optical frequency
k_0	free space wave number
ϵ_{NL}	Nonlinear dielectric constant
$\alpha(\omega)$	attenuation coefficient
γ	nonlinear coefficient
A_{eff}	the effective area
A	The slowly varying amplitude of the pulse envelope
T_0	Initial pulse bandwidth
P_0	Peak power
L_{\square}	Fiber length
L_D	Dispersion length
L_{NL}	Nonlinear length
β_2	Group velocity dispersion
U	normalized amplitude
s	self – steeping effect
τ_R	intrapulse Raman scattering
P_T	transmitted power
C	The Rayleigh Scattering coefficient
α_{OH}	the OH absorption loss
Symbol	Meaning
α_{IR}	the infrared absorption loss

α_n	Abbreviations	Meaning
α_r	PCFs	Photonic Crystal fibers
	HC-PCFs	Hollow Core - Photonic Crystal fibers
γ	PBG	photonic Bandgap Guidance
β	TIR	Total Internal Reflection
N	MTIR	Modified Total Internal Reflection
f	OVD	Outside Vapor Deposition
Γ	MCVD	Modified Chemical Vapor Deposition
	VAD	Vapor phase Axial Deposition
Γ	MFD	Mode Field Diameter
n	NLSE	Nonlinear Schrödinger Equation
γ	GVD	Group Velocity Dispersion
	SPM	Self Phase Modulation
γ	LED	Light Emitting diode
γ	PMD	Polarization Mode Dispersion
K	CPM or XPM	Cross Phase Modulation
	FWM	Four Wave Mixing
I	SRS	Stimulated Raman Scattering
K	SBS	Stimulated Brillouin Scattering
	FWHM	Full Width at Half Maximum
θ	NA	Numerical Aperture
Φ_l	Linear phase shift	
Φ_{nl}	Nonlinear phase shift	

List of abbreviations

