

List of Abbreviations

Δp	pressure drop through valve in MPa
A	cross section
ANSI	American National Standards Committee
ANSI	American National Standards Institute (www.ansi.org)
ASE	Amplified spontaneous emission
ASIC	Application Specific Integrated Circuit
ASTM	American Society for Testing and Materials
BANSAI	Biomedical analysis system with laser light
BCG	Bromocresol green
BOD	Biological oxygen demand
C	carbon
CA	Controlled atmosphere
CFD	Computational fluid dynamics
CIE	The International Commission on Illumination (Commission Internationale de l'Éclairage)
C_j	junction capacitance
CTE	coefficients of thermal expansion
DPSS	diode-pumped solid-state
DUT	device under test
DUV	deep ultraviolet
ECL	external cavity laser
ELSA	electron stretcher accelerator
EMF	electromotive force
eV	electron volts
FRET	Fluorescence Resonance Energy Transfer
FTIR	fourier transform infrared spectroscopy
GRIN	graded index
h	thickness of the material
HA	Human albumin
HeNe	helium neon
I_D	diode current
I_L	current generated by incident light
IONAS	Institute for Optofluidics and Nanophotonics
IRS	integrated reverse symmetry
I_S	photodiode reverse saturation current
I_{SC}	short circuit current
J	Joule
k	extinction coefficient/wavenumber/Boltzmann constant
K	Kelvin
k_v	defined volume flow of water in m^3/h
LED	light-emitting diode
M	molecular weight/mass
M'	mass flow in kg/h
MID	magnetic inductive flow
MMI	multimode interference
n	refractive index
N_A	Avogadro's number

XVI — List of Abbreviations

NA	numerical aperture
NC	normally closed
n_{eff}	effective refractive index
n_f	refractive index of the film layer of a waveguide
NO	normally open
NTC	negative temperature coefficient
OLED	organic light-emitting diode
p_1	absolute pressure at valve inlet in MPa
p_2	absolute pressure at valve outlet in MPa
PC	polycarbonate
PDMS	polydimethylsiloxane
PIC	photonic integrated circuit
PLC	polarization controller
PMMA	polymethylmethacrylate
PSD	position sensitive device
psi	pounds per square inch
PTC	positive temperature coefficient
PVA	polyvinylalcohol
q	electron charge
QCM	quartz micro gravimetry
QD	quantum dot
R	molar refractivity
RI	refractive index
R_m	molar refraction
R_s	series resistance
SMA	shape memory actuator
SMP	shape memory polymer
SPD	spectral power distribution
T	absolute temperature in Kelvin
V	volume flow in m^3/h (at 0.1 MPa and 20 °C)
v_k	specific volume at $p^{1/2}$ in m^3/kg
V_{OC}	open circuit voltage
vph	phase velocity
WKB	Wentzel-Kramers-Brillouin Approximation
ZLMT	Zentrum für Labormedizin, Mikrobiologie und Transfusionsmedizin
α	flow coefficient
α_e	polarizability of electrons
ϵ_0	dielectric constant
λ	wavelength
ρ	density in kg/m^3 (at 0.1 MPa and 20 °C)
ρ_1	density of the gas upstream of valve
ψ	outflow function (function of pressure ratio p_2/p_1)