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LIST OF ABBREVIATIONS

Abbreviation	Details
APD	Avalanche Photodiode
AFM	Atomic Force microscopy
ALD	Atomic Layer Deposition
CQD	Colloidal Quantum Dot
CVD	Chemical Vapor Deposition
DI	De-ionized
EQE	External Quantum Efficiency
2 D	Two-dimentional
FETs	Field-Effect Transistors
FWHM	Full-width-at-half-maximum
ITO	Indium doped Tin Oxide
LPE	Liquid Phase Exfoliation
NIR	Near Infrared
NRs	Nanorods
NDIR	Non-Dispersive Infrared Spectroscopy
MoS2	Molybdenum disulphite
MoSe2	Molybdenum diselenide
MSM	Metal-Semiconductor-Metal
MOCVD	Metal Organic Chemical Vapor Deposition
MBE	Molecular Beam Epitaxy
OLED	Organic Light Emitting Diode
OCT	Optical Coherence Tomography
SAED	Selected Area Electron Diffraction
SMU	Source and Measuring Unit
TMDs	Transition Metal Dichalcogenides
TEM	Transmission electron microscopy
TFT	Thin Film Transistor
WS2	Tungstun disulphide
WSe2	Tunstun diselenide
WDM	Wavelength Division Multiplexing
UV-Vis	Ultraviolet-Visible
VLC	Visible Light Communication
VTD	Vacuum Thermal Deposition
XRD	X-ray Diffraction
XPS	X-ray Photoelectron Spectroscopy
ZnO	Zinc Oxide

LIST OF SYMBOLS

Symbol	Abbreviation
A_{eff}	Effective area of the device
Al	Aluminium
Ag	Silver
E_g	Energy Bandgap
E_{ph}	Photon Energy
E_C	Bottom of the Conduction Band
E_V	Bottom of the Valence Band
α	Absorption Coefficient
β	Band tailing parameter
h	Plancks constant
v	Frequency
c	Velocity of light
e	Electron charge
f_{3-dB}	3-db bandwidth
I_{dark}	Current Under Dark Condition
I_{light}	Current Under Illumination Condition
I_{ph}	Photocurrent
J_d	Dark current density
E_F	Fermi Energy Level
P_{opt}	Incident Optical Power
t_r	Rise time
t_f	Fall time
R	Responsivity
D^*	Specific Detectivity
λ	Wavelength
ϕ_M	Metal work function
ϕ_S	Semiconductor work function