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Ph.D. Student

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List of Symbols

Symbol	*Description*
θ	Angle of incident
O_{zn}	Antisite oxygen
A	Area
E_g	Band gap energy
ϕ_B	Barrier height
k	Boltzmann constant
V_{bi}	Build in potential
ΔI	Change in current
ΔR	Change in resistance
ΔV	Change in voltage
ΔE_c	Conduction band offset
J	Current density
I_a	Current in air
I_g	Current in target gas
E_c	Conduction band energy
τ_d	Decay time
W	Depletion width
q	Electron charge
G	Electron conduction
χ	Electron effinity
μ	Electron mobility
$q\,\phi_r$	Energy difference in conduction band and fermi level
υ	Frequency
η	Ideality factor
σ	In plane stress
d	Inter plane spacing
β	Interface related parameters
c	Lattice constant
l	Length
$\overline{\phi_B}$	Mean barrier height
Φ_m	Metal work function
hkl	Miller indices
T	Operating temperature
O_i	Oxygen interstitial
V_o	Oxygen vacancies
h	Plank constant
n	Power coefficient
S	Relative response
R_a	Resistance in air
R_g	Resistance in target gas
ϕ_r	Reverse barrier height
V_r	Reverse bias voltage
I_o	Reverse saturation current
J_r	Reverse saturation current density
A^*	Richardson constant
τ_r	Rise time

α	Roughness exponent
γ	Slop
σ	Standard deviation
c_o	Stress free lattice constant
E_v	Valance band energy
ΔE_v	Valance band offset
V_a	Voltage in air
V_g	Voltage in target gas
λ	Wavelength
Zn_i	Zinc interstitial
V_{zn}	Zinc vacancies

Abbreviation	*Full form*
AFM	Atomic force microscopy
BH	Barrier inhomogeneities
CL	Cathodoluminescence
D	Dimentional
DHJ	Double heterojunction
EAM	Electron affinity model
FESEM	Field emission scanning electron microscopy
FWHM	Full width half maxima
HJ	Heterojunction
I-V-T	Current voltage temperature
LO	Logitudinal optical
MFC	Mass flow controller
M-H	Magnetic field- Hysteresis
MOCVD	Metal organic chemical vapour deposition
NBE	Near band emission
NR	Nanorod
NT	Nanotube
NW	Nanowire
PL	Photoluminescence
PLD	Pulse laser deposition
PSD	Power spectral densities
PVD	Physical vapour deposition
RF	Radio frequency
RMS	Root mean square
RT	Room temperature
SAED	Selected area electron diffraction
SHJ	Single heterojunction
TE	Thermionic emission
TFE	Trap field emission
TO	Transverse optical
Uv-Vis	Ultraviolet- visible
VLS	Vapour liquid solid
VS	Vapour solid
VSM	Vibrating sample magnetron
XRD	X-ray diffraction