

LIST OF ABBREVIATIONS

3D	Three Dimensional
AES	Auger Electron Spectroscopy
AFM	Atomic Force Microscopy
Al:ZnO	Aluminium Doped ZnO
AlCl ₃	Aluminum Chloride
ANZO	Aluminium nitrogen Codoped ZnO
ASTM	American Standard for Testing of Materials
AZO	Aluminium Doped ZnO
AZOY	Aluminium –Yttrium Codoped ZnO
B(OH) ₃	Boric acid
B:ZnO	Boron Doped ZnO
B ₂ H ₆	Diborane
BN	Boron Nitride
BN:ZnO	Boron Nitrogen Codoped ZnO
BnZnO	Boron-Zinc-Oxide
CH ₃ COONH ₄	Ammonium Acetate
CO ₂	Carbon Dioxide
CRT	Cathod Ray Tube
Cs	Concentration of Precursor
DEZ	Diethyl-zinc
DSSC	Dye Sensitized Solar Cell
EDX	Energy Dispersive X-ray analysis
EELS	Electron Energy Loss Spectroscopy
E _g	Optical Band Gap
EQE	External Quantum Efficiency
ETA	Extremely Thin Absorber
FCVA	Filtered Cathodic Vacuum Arc Technique
FTO	Fluorine Doped Tin Oxide
FTZO	Fluorine and Tin Co-doped ZnO
FWHM	Full Width at Half-Maximum
FZO	Fluorine Doped ZnO
Ga:ZnO	Gallium-Doped zinc oxide
GaAs	Gallium Arsenide
GaN	Gallium Nitride
GPa	Giga Pascal
GZO	Gallium Doped ZnO
GZOB	Gallium Boron codoped ZnO
HRTEM	High Resolution Transmission Electron Microscopy
h ν	Photon Energy
IBED	Ion Beam Enhanced Deposition
ICP-CVD	Inductively Coupled Plasma Assisted Chemical Vapor Deposition
ITO	Indium Tin Oxide
JCPDS	Joint Committee Powder Diffraction Standards
J _{sc}	Short-Circuit Current Density
LEDs	Light Emitting Diodes
LPM	Liter Per Minute
LP-MOCVD	Low Pressure Metalorganic Chemical Vapor Deposition
LPV	Laser Induced Photo-voltage

LSMCD	Liquid Source Misted Chemical Vapor Deposition
meV	milli electron volt
n	Electron Concentration
N:ZnO	Nitrogen Doped ZnO
NCD	Nanocrystalline Diamond
NH ₃	Ammonia
O _i	Oxygen Interstitial
p	Crystallite Size
pH	Measure of Acidity or Basicity
PLD	Pulsed Laser Deposition
PPC	Persistent Photoconductivity
R _H	Hall coefficient
RMS	Root Mean Square
SAED	Selected Area Electron Diffraction
ScAlMgO ₄	Scandium Magnesium Aluminate
SEM	Scanning Electron Microscopy
Si ₃ N ₄	Silicon Nitride
SIMS	Secondary Mass Ion spectroscopy
SnO ₂	Tin Oxide
SPD	Spray Pyrolysis Deposition
SPT	Spray Pyrolysis Technique
TC's	Transparent Conductors
TCOs	Transparent Conducting Oxides
TEM	Transmission Electron Microscopy
TFT	Thin-film Transistor
Ts	Substrate Temperature
UV-Vis	Ultra-violet-visible Spectrum
VBM	Valence Band Maximum
V _O	Oxygen Vacancies
V _{OC}	Open-Circuit Voltage
V _{Zn}	Zinc Vacancies
XPS	X-ray Photoelectron Spectroscopy
XRD	X-ray diffraction
Zn(C ₂ H ₅) ₂	Diethyl Zinc
Zn(CH ₃ COO) ₂ ·2H ₂ O	Zinc Acetate Dehydrate
Zn(OH) ₂	Zinc Hydroxide
Zn ₃ As ₂	Zinc Arsenide
Zn ₃ P ₂	Zinc Phosphide
ZnCl ₂	Zinc Chloride
Zn _i	Zinc Interstitials
ZnNO ₃	Zinc Nitrate
ZnO	Zinc Oxide
ZnSe	Zinc Selenide
Δ	Secondary Electron Coefficient
μ	Carrier Mobility