

## List of Abbreviations

AIP	All-inorganic perovskite
ALD	Atomic Layer Deposition
AM	Air Mass
a.u.	Arbitrary Unit
B.E.	Binding Energy
BET	Brauner Emmett Teller
BJH	Barrett Joyner Halenda
CE	Counter Electrode
CN	Carbon nitride
CNB	Carbon nanobubble
CNT	Carbon Nanotube
CPE	Constant Phase Element
CR	Cresol Red
CS	Carbon sphere
CV	Cyclic Voltammetry
DI	De-ionized
DRS	Diffuse Reflectance Spectra
DSSC	Dye-Sensitized Solar Cells
EIS	Electrochemical Impedance Spectroscopy
FCC	Face Centered Cubic
FE-SEM	Field Emission Scanning Electron Microscope
FF	Fill Factor
FWHM	Full Width Half Maximum
FTO	Fluorine Doped Tin Oxide
g-C <sub>3</sub> N <sub>4</sub>	Graphitic carbon nitride
GCN	Graphitic Carbon nitride
GW	Gigawatt
HIP	Hafnium isopropoxide
HDA	Hexadecylamine
HOMO	Highest Occupied Molecular Orbital
HR-TEM	High Resolution Transmission Electron Microscope
ICDD	International Centre for Diffraction Data
JCPDS	Joint Committee on Powder Diffraction Standards
LHE	Light Harvesting Efficiency
LUMO	Lowest Unoccupied Molecular Orbital
MB	Methylene blue
MO	Methyl orange
MWCNT	Multi-walled Carbon Nanotube
NBE	Near Band Edge
NCs	Nanocrystals
NIR	Near-Infrared
OA	Oleic Acid
OAm	Oleylamine
ODE	1-octadecene
PCE	Photo Conversion Efficiency
PL	Photoluminescence Spectroscopy
PV	Photovoltaic
rpm	Revolution per minute
SAED	Selected Area Electron Diffraction
SB	Solochrome black
SNP	Nanospheroids
TTIP	Titanium tetra isopropoxide
TB	Thymol blue
TPD	Temperature Programmed Desorption
TPO/R	Temperature Programmed Oxidation/Reduction
TW	Terra watt

UV-vis      *Ultraviolet-Visible Spectroscopy*  
XRD        *X-ray Diffraction*  
XPS        *X-ray Photoelectron Spectroscopy*