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ABBREVIATIONS AND SYMBOLS

Physical constants

Avogadro constant, N_A	=	6.022×10^{23}	mol^{-1}
Boltzmann constant, k	=	1.3806×10^{-23}	$J\ K^{-1}$
Elementary charge, e	=	1.602×10^{-19}	C
Electron mass, m_e	=	9.109×10^{-19}	kg
Planck constant, h	=	6.626×10^{-34}	J s
Vacuum permittivity, ε_0	=	8.854×10^{-12}	$F\ m^{-1}$
Velocity of light, c	=	2.998×10^{8}	$m\ s^{-1}$
1 electron volt, 1eV	=	1.602×10^{-19}	J

Physical variables

ν	=	Frequency
ω	=	Angular frequency
ω_c	=	Plasma frequency
λ	=	Wavelength
k	=	Wave vector
m*	=	Effective mass
m_e*	=	Electron effective mass
m_h*	=	Hole effective mass
ff	=	Fill factor
η	=	Energy conversion efficiency

J_{sc}	=	Short circuit current density
V_{oc}	=	Open circuit voltage
P_{in}	=	Incident light power
P_{max}	=	Maximum power output
V_{max}	=	Maximum photovoltage
E_g	=	Energy band gap
E_F	=	Fermi energy
$g_c(E)$	=	Density of states in the conduction band
$g_v(E)$	=	Density of states in the valence band
n_0	=	Electron concentrations
p_0	=	Hole concentrations
N_C	=	Conduction-band effective densities of state
N_V	=	Valence-band effective densities of state
n_i	=	Intrinsic carrier concentration
E_i	=	Fermi energy in an intrinsic semiconductor
χ	=	Electron affinity
ϕ	=	Work function
V_{bi}	=	Built-in potential
W_D	=	Depletion width
ε'	=	Relative permittivity or dielectric constant
θ_A	=	Mean power transfer per electron
δ	=	Loss angle
E_{rms}	=	Root-mean-square electric field

Abbreviations

A°	=	Angstrom
PL	=	Photoluminescence Spectrometry
SEM	=	Scanning Electron Microscopy
TEM	=	Transmission Electron Microscopy
XRD	=	X-Ray Diffraction Spectrometer
JCPDS	=	The Joint Committee for Powder Diffraction Standards
GPE	=	Gel Polymer Electrolyte
DSSCs	=	Dye sensitized solar cells
HOMO	=	Highest occupied molecular orbital
LUMO	=	Lowest unoccupied molecular orbital
AM	=	Air mass
LHE	=	Light harvesting efficiency