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## ABBREVIATIONS AND SYMBOLS

### Physical constants

$$e_o = 1.602 \times 10^{-19} \text{ C} = \text{elementary charge}$$

$$h = 6.626 \times 10^{-34} \text{ Js} = \text{Planck constant}$$

$$k_B = 1.381 \times 10^{-23} \text{ J K}^{-1} = \text{Boltzmann constant}$$

$$N_A = 6.022 \times 10^{23} \text{ mol}^{-1} = \text{Avogadro's number}$$

### Physical variables

$$^{\circ}\text{C} = \text{Degree Celcius}$$

$$\text{\AA} = \text{Angstrom}$$

$$f = \text{Frequency}$$

$$z = \text{Collision frequency}$$

$$\lambda = \text{Wavelength}$$

$$FF = \text{Fill factor}$$

$$E_g = \text{Band gap energy}$$

$$E_f = \text{Fermi level}$$

$$J_{sc} = \text{Short circuit current density}$$

$$V_{oc} = \text{Open circuit voltage}$$

$$\eta = \text{Energy conversion efficiency}$$

$$P_{in} = \text{Incident light power}$$

$$V_{max} = \text{Maximum photovoltage}$$

$$P_{max} = \text{Maximum power output}$$

$R_{\text{sh}}$	=	Shunt resistance
$R_{\text{s}}$	=	Series resistance
$J_{\text{lim}}$	=	Limited current density
$D_{\text{I}_3^-}$	=	Diffusion coefficient of $\text{I}_3^-$
$c_{\text{I}_3^-}$	=	Concentration of $\text{I}_3^-$
$U$	=	Energy transferred to a particle
$Q$	=	Electric charge
$m$	=	Mass of the particle
$\alpha$	=	Total absorption coefficient
$b$	=	Path length
$t$	=	Effective thickness
$\rho$	=	Density of sample
$T$	=	Transmittance of photon
$l$	=	Distance between electrodes

### Abbreviations

EDS	=	Energy Dispersive X-ray Spectroscopy
PL	=	Photoluminescence Spectrometry
SEM	=	Scanning Electron Microscopy
TEM	=	Transmission Electron Microscopy
XRD	=	X-Ray Diffraction Spectrometer
JCPDS	=	Joint Committee for Powder Diffraction Standards

IPCE	=	Incident photon-to-current conversion efficiency
HOMO	=	Highest occupied molecular orbital
LUMO	=	Lowest unoccupied molecular orbital
AM	=	Air mass
LHE	=	Light harvesting efficiency
DSSC	=	Dye-sensitized solar cell