
List of abbreviations

Acronyms

2 D	2 Dimensions
ASF	Atomic Sensitivity Factor
AFM	Atomic Force Microscopy
BESSY	Berliner ElektronenSpeicherring Gesellschaft für Synchrotronstrahlung m.b.H.
CBE	Chemical Beam Epitaxy
CDW	Charge Density Wave
CVD	Chemical Vapor Deposition
DHRTEM	Dynamic High Resolution Transmission Electron Microscopy
DOS	Density Of States
EDC	Energy Distribution Curve
EDX	Energy Dispersive X-ray analysis
EELS	Electron Energy Loss Spectroscopy
EMF	ElectroMotive Force
ESCA	Electron Spectroscopy for Chemical Analysis
ESR	Electron Spin Resonance
EXAFS	Extended X-ray Absorption Fine Structure
FWHM	Full Width at Half Maximum
HMI	Hahn-Meitner-Institut Berlin G.m.b.H.
HMDST	HexaMethylDiSilThiane
HRTEM	High Resolution Transmission Electron Microscopy
LDA	Local Density Approximation
LDOS	Local Density Of States
LEED	Low Energy Electron Diffraction
LT	Low Temperature
MBE	Molecular Beam Epitaxy
MOCVD	Molecular Organic Chemical Vapor Deposition
NMR	Nuclear Magnetic Resonance
OCP	Open Circuit Potential
OCV	Open Circuit Voltage
PES	Photoelectron Spectroscopy
PID	Proportion, Integral and Derivative
RBM	Rigid Band Model
RBS	Rutherford Backscattering Spectroscopy
RT	Room Temperature
STM	Scanning Tunneling Microscopy
STS	Scanning Tunneling Spectroscopy
SXPS	Synchrotron induced X-ray Photoelectron Spectroscopy
TBDS	Tert-Butyl DiSulfide
TMDC	Transition Metal DiChalcogenide
UHV	Ultra High Vacuum
UPS	Ultra-violet Photoelectron Spectroscopy
vdW	van der Waals
XAFS	X-ray Absorption Fine Structure
XAS	X-ray Absorption Spectroscopy
XANES	X-ray Absorption Near-Edge Structure

XPS	X-ray Photoelectron Spectroscopy
XRD	X-ray Diffraction

Experimental quantities

a, b, c	crystallographic constants
a, b, c	crystallographic axes
<i>a</i>	chemical activity
<i>BE</i>	binding energy
ΔE	energy resolution
E_{kin}	electrons kinetic energy
E_F	Fermi level
<i>G</i>	Gibbs' free energy
<i>j</i>	total angular momentum
<i>l</i>	orbital angular momentum quantum number
<i>N</i>	number of units
<i>P</i>	pressure
<i>T</i>	temperature
<i>V</i>	voltage
<i>x</i>	guest concentration (relative to host)
α	asymmetry parameter
η	electrochemical potential
μ	chemical potential
φ	electrostatic potential
ϕ	Galvani potential
ψ	Volta potential
χ	surface potential
Φ	work function
λ_e	electrons free mean path
σ	ionization cross section
ν	photon frequency

Units

Å	Ångstrom ($1\text{Å} = 10^{-10}\text{ m}$)
amu	atomic mass unit ($1\text{ amu} = 1.660\cdot 10^{-27}\text{ kg}$)
eV	electronvolt ($1\text{eV} = 1.6\cdot 10^{-19}\text{ J}$)
L	Langmuir ($1\text{ L} = 10^{-6}\text{ Torr} \cdot 1\text{ s} = 1.33\text{ mbar} \cdot 1\text{ s}$)
mbar	millibar ($1\text{ mbar} = 100\text{ Pa}$)
mol	mole ($1\text{ mol} = 6.02214\cdot 10^{23}\text{ units of substance}$)

Constants

F	Faraday constant ($9.64845\cdot 10^4\text{ C mol}^{-1}$)
h	Plank's constant ($6.62608\cdot 10^{-34}\text{ J s}$)
N_A	Avogadro's number ($6.02214\cdot 10^{23}\text{ mol}^{-1}$)