

# *Abbreviations*

AES	Auger Electron Spectroscopy
AFM	Atomic Force Microscopy
DFT	Density Function Theory
EELS	Electron Energy Loss Spectroscopy
ESCA	Electron Spectroscopy for Chemical Analysis
ESR	Electron Spin Resonance
EXAFS	Extended X-ray Absorption Fine Structure
FEEM	Field Electron Emission Microscopy
FIM	Field Ion Microscopy
FTIR	Fourier-Transform Infrared
HAADF	High-Angle Annular Dark Field
HREELS	High-resolution Electron Energy Loss Spectroscopy
HRTEM	High-resolution Transmission Electron Microscopy
IETS	Inelastic Electron Tunnelling Spectroscopy
IRAS	Infrared Reflection Absorption Spectroscopy
L	Langmuir (exposure of 1 Torr s)
LEED	Low-energy Electron Diffraction
ML	Monolayer
NEXAFS	Near Edge X-ray Absorption Fine Structure
PIS	Penning Ionisation Spectroscopy
RAIRS	Reflection Absorption Infrared Spectroscopy
SEM	Scanning Electron Microscopy
SEXAFS	Surface Extended X-ray Absorption Fine Structure
SNOM	Scanning Near-field Optical Microscopy
SPM	Scanning Probe Microscopy
STEM	Scanning Transmission Electron Microscopy
STM	Scanning Tunnelling Microscopy
STS	Scanning Tunnelling Spectroscopy
SXRD	Surface X-ray Diffraction
TPD	Temperature-programmed Desorption
TPR	Temperature-programmed Reaction
UHV	Ultra-high Vacuum
UPS	Ultraviolet Photoelectron Spectroscopy
XPS	X-ray Photoelectron Spectroscopy
XRD	X-ray Diffraction