

Symbols and Abbreviations

nm	Nano metre
PAA	Poly Acrylic Acid
PVA	Poly Vinyl Alcohol
PEG	Poly Ethelene Glycol
S-band	1.55-5.2 GHz
VSM	Vibrating Sample Magnetometre
SEM	Scanning Electron Microscope
XRD	X-Ray Diffraction
FESEM	Field Emission Scanning Electron Microscope
EDAX	Energy Dispersive X-ray Analyser
EDS	Energy Dispersive Spectrum
Cu K _α radiation	Copper K _α radiation, $\lambda = 0.1542$ nm
EDX	Energy Dispersive X-ray analysis
TE mode	Transverse electric mode
JCPDS	Joint Committee on Powder Diffraction Study
emu/g	Electromagnetic units/gram
G	Gauss
Am ²	Ampere – metre ²
λ	Wavelength
M	Molar
KHz	Kilo Hertz
MHz	Mega Hertz
GHz	Giga Hertz
Å	Angstrom units

M_s	Saturation magnetization
ϵ_r'	Real part of complex permittivity
ϵ_r''	Imaginary part of complex permittivity
$\tan \delta$	Loss tangent
D_i	Electric induction
ϵ_{ik}	Permittivity tensor or dielectric tensor
E_k	Electric field
σ_e	Effective a.c conductivity
ϵ_0	Permittivity of free space
$\Omega^{-1}m^{-1}$	Ohm ⁻¹ metre ⁻¹ (S. I. unit of a.c. conductivity)
$S m^{-1}$	Siemens/metre
$kg m^{-3}$	Kilograms/cubic metre
μ_r	The complex relative permeability of the medium
μ_r'	The real part of complex permeability
μ_r''	Imaginary part of complex permeability
χ	Magnetic susceptibility
μ	The absolute value of permeability of the medium
ϵ	The absolute value of permittivity of the medium
Fig	Figure
0D	Zero Dimensional
1D	One Dimensional
2D	Two Dimensional
3D	Three Dimensional
PVD	Physical Vapor Deposition
CVD	Chemical Vapor Deposition
MOCVD	Metallorganic Chemical Vapor deposition

MBE	Molecular Beam Epitaxy
DLCA	Diffusion Limited Colloidal Aggregation
RLCA	Reaction Limited Colloidal Aggregation
IUPAC	International Union of Pure and Applied Chemistry
cmc	Critical micelle concentration
SAM	Self Assembled Monolayers
NC	Nano Crystal
GMR	Giant Magneto Resistance
CMR	Colossal Magneto Resistance
HRTEM	High Resolution Transmission Electron Microscopy
STM	Scanning Tunneling Microscope
W	Watt
Pa	Pascal
K	Kelvin
SILAR	Successive Ionic Layer Adsorption and Reaction
AFM	Atomic Force Microscopy
DLS	Dynamic Light Scattering
SAXS	Small Angle X-Ray Scattering
SANS	Small Angle Neutron Scattering
HREM	High Resolution Electron Microscopy
SPM	Scanning Probe Microscope
SFM	Scanning Force Microscope
STS	Scanning Tunneling Spectroscopy
IR	Infra Red
FTIR	Fourier Transform Infra Red
UV-vis	Ultra Violet visible
σ	Sigma

π	Pi
n	Non bonding
c	Concentration of the solution in moles per litre
k'	Molar absorption co-efficient
I	Intensity
kJmol^{-1}	Kilo Joules per mol
P	Pressure
STP	Standard Temperature and Pressure
DA	Donor Acceptor
DOS	Density of States
TGA	Thermo gravimetric analysis
DTA	Differential thermal analysis
BET	Brunauer Emmett Teller
ATP	Adenosine Tri Phosphate
DNA	Deoxyribo Nucleic Acid
Fullprof	Full profile
SAED	Selected Area Electron Diffraction
MB	Methylene Blue
CBC	Bonded Ceramic Material
KeV	Kilo electron Volt
PL	Photoluminescence emission
PLE	Photoluminescence Excitation