

Abbreviations

NPs	Nanoparticles
MNPs	Magnetic Nanoparticles
XRD	X-ray diffraction
TEM	Transmission electron microscopy
HR-TEM	High-Resolution Transmission Electron Microscopy
XPS	X-ray photoelectron spectroscopy
PL	Photoluminescence spectroscopy
SEM	Scanning electron microscopy
STM	Scanning tunneling microscopy
AFM	Atomic force microscopy
UPS	Ultraviolet photoelectron spectroscopy
XES	X-ray emission spectroscopy
NEXAFS	Near-edge X-ray absorption fine structure
EXAFS	Extended X-ray absorption fine structure
SAXS	Small angle X-ray scattering
EDX	Energy dispersive X-ray analysis
FT-IR	Fourier transform infrared spectroscopy
ATR-IR	Attenuated total reflection infrared spectroscopy
BET	Brunauer-Emmet-Teller
BJH	Barrett-Joyner-Halenda
TGA	Thermo gravimetric analysis
IOTs	Iron ore tailings
SAED	Selected area electron diffraction patterns
VSM	Vibrating sample magnetometer
GC	Gas chromatography
COD	Crystallography Open Database
IO@NiNPs	Iron oxide@Nickel Nanoparticle
TOF	Turnover frequency

Abbreviations

TON	Turnover number
TTO	Total turnover number
AAS	Atomic absorption spectrophotometer
MW	microwave
LCMS	Liquid chromatogram-mass spectrometer
LD	L-3,4-dihydroxy phenylalanine
NMR	Nuclear magnetic resonance
TLC	Thin-layer chromatography
JCPDS	Joint Committee on Powder Diffraction Standards
