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***Dedicated
to
My
Family
&
Teachers***

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ABBREVIATION

NPs	Nanoparticles
SMNPs	Starch functionalized magnetite nanoparticle
Fe₃O₄/Ag/Ag₂O	Magnetite/silver/silver oxide nanostructures
Fe₃O₄/Cu₂O	Magnetite/ cuprous oxide nanostructures
α-FeOOH/β-FeOOH	Goethite/akagenite nanocomposites
α-FeOOH/β-FeOOH /Cu₂O	Goethite/akageneite/cuprous oxide nanostructures
PNP	<i>p</i> -nitrophenol
MO	Methyl orange
NaOH	Sodium hydroxide
HCl	Hydrochloric acid
VB	Valance Band
CB	Conduction Band
HOMO	Highest occupied molecular orbital
LUMO	Lowest unoccupied molecular orbital
E_g	Band gap
LSPR	Localized surface plasmon resonance
t	time
t₀	zero time
A_t	Absorbance at time t
A₀	Absorbance at time t ₀
TOF	Turn over frequency

H₂O₂	Hydrogen Peroxide
OH[·]	Hydroxyl radical
OOH[·]	Peroxide radical
OH⁻	Hydroxide ion
UV-vis	Ultra violet visible Spectroscopy
UV-DRS	Ultra violet diffuse reflectance spectroscopy
XRD	X-ray diffractometer
FWHM	Full width half maximum
FTIR	Fourier transforms infrared spectroscopy
TEM	Transmission electron microscopy
MPMS	Magnetic property measurement system
XPS	X-ray photoelectron spectroscopy
MS	Mott Schottky

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