SYNTHESIS OF OPEN-SHELL IRON OXIDE-POLYELECTROLYTE-SILICA NANOCOMPOSITE FOR WATER TREATMENT APPLICATION

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by

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LIST OF ABBREVIATIONS

AFM	Atomic force microscopy
AMX	Amoxicillin
As	Arsenic
Au	Gold
B	Boron
CCC	Citical coagulation concentration
CeO_2	Cerium (IV) oxide
Cd	Cadmium
Co	Cobalt
Cr	Chromium
Cu	Copper
DLS	Dynamic light scattering
DLVO	Derjaguin-Landau-Verwey-Overbeek
Fe	Iron
FeO	Wüstite
Fe_3O_4	Magnetite
γ-Fe_2O_3	Maghemite
α-Fe_2O_3	Hematite
GNS	Graphene nanosheets
Hg	Mercury
HGMS	High-gradient magnetic separation
HNT	Halloysite nanotubes
H_2O_2	Hydrogen peroxide
H_2O	Water

ICP-OES	Inductively coupled plasma-optical emission spectrometry
IONPs	Iron oxide nanoparticles
LBL	Layer-by-layer
LGMS	Low-gradient magnetic separation
MB	Methylene Blue
Mg	Magnesium
MIH	Magnetic inductive heating
Mn	Manganase
MO	Methyl Orange
MRI	Magnetic resonance imaging
Ms	Saturation magnetization
MW	Molecular weight
NaOH	Sodium hydroxide
NdFeB	Neodymium boron ferrite
NH_2	Amidogen
NH_3	Ammonia
Pb	Lead
PCP	Pentachlorophenol
Pd	Palladium
PDI	Polydispersity index
PDDA	Poly(diallydimethylammonium chloride)
PEI	Poly(ethyleneimine)
PSS	Poly(styrenesulfonate)
QCM-D	Quartz crystal microbalance with dissipation
RhB	Rhodamine B

RMS	Root-mean-square
SDS	Sodium dodecyl sulphate
Se	Selenium
SFA	Surface Force Apparatus
SiO_2	Silica
Te	Tellurium
TEM	Transmission electron microscopy
TEOS	Tetraethoxyorthosilicate
Ti	Titanium
U	Uranium
XPS	X-ray Photoelectron Spectroscopy
XRD	X-ray powder diffraction
ZnO	Zinc oxide
ZnS	Zinc sulphide

LIST OF SYMBOLS

cm	Centrimeter
D	Dissipation
f	Frequency
g	Gram
G	Gauss
Hz	Hertz
L	Litre
m	Meter
mg	Milligram
mM	Millimolar
mL	Millilitre
min	Minutes
ng	Nanogram
nm	Nanometer
µm	Micrometre
ppb	Part per billion
ppm	Part per million
rpm	Revolutions per minute
s	Second
n	Overtone number
t	Time
T	Tesla
I	Ionic strength
L	Thickness of the brush