



Removal of some metal ions from water matrices using high performance separation technique and nano-sorbents

A Thesis submitted by

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List of Abbreviations

AOP	Advanced oxidation processes
APTS	3-Aminopropyltrimethoxysilane
COD	Chemical oxygen demand
CVC	Chemical vapor condensation
CWAO	Catalytic wet air oxidation
EDL	Electrodeless discharge lamp
FT-IR	Fourier transform infrared
GAC	Granulated activated carbon
HR-TEM	High resolution-transmission electron microscope
MAE	Microwave-assisted extraction
MAS	Microwave-assisted sorption
MECD	MW enhanced catalytic degradation
MES	Microwave-enforced sorption
MW	Microwave
MWDP	MW with direct photolysis
MWPC	MW with photocatalysis
N-Si	Silica nanoparticles (nanosilica)
N-Si-Glu	Nanosilica-immobilized-glutathione
N-Si-Gly	Nanosilica-immobilized-glycine
N-Si-Sa	Nanosilica-immobilized-salicylic acid
N-Si-Su	Nanosilica-immobilized-succinic acid
N-Si-Vit.C	Nanosilica-immobilized-vitamin C
N-Si-Vit.L	Nanosilica-immobilized-vitamin L

PCP	Pentachlorophenol
PEGMA	poly(ethylene glycol) methacrylate
PMMA	polymethyl methacrylate
PPGMA	poly(propylene glycol) methacrylate
SEM	Scanning electron microscope
TEOS	Tetraethylorthosilicate
TGA	Thermal gravimetric analysis
TOC	Total organic carbon
TTIP	Titanium tetra isopropoxide
VTs	Vinyltriethoxysilane
WW	Wastewater
XRD	X-ray diffraction

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