A	Area under the breakthrough curve
AAS	Atomic Absorption Spectroscopy
b	Langmuir constant related to the affinity of binding sites (L/mg)
BDST	Bed Depth Service Time Model
BET	Brauner-Emmett-Teller
C	Intercept called boundary layer effect
C_{AE}	Equilibrium concentration of the solute on the adsorbent (mg/L)
C_{ads}	Adsorbed metal ion concentration
C_b	Breakthrough metal ion concentration
C_e	equilibrium concentration of the adsorbate (mg/L) in batch mode
C_t	concentration of the adsorbate remaining after adsorption has taken place over a time period of t (mg/L), in batch mode
C_t	effluent metal ion concentration (mg/L) in continuous mode
C_0	initial adsorbate concentration
Conc.	concentration (mg/L)
E	Mean free energy of the adsorption (kJ/mol)
e.g.	for example
et al.	and others
EDX	Energy Dispersive X-ray Analysis
FTIR	Fourier-transform infrared
i.e.	that is to say
h	hour
E%	Elution efficiency
F	Polanyi potential
ΔG	Gibbs free energy (kcal/mol)
GO	Graphene Oxide
h	initial sorption rate of pseudo second order kinetics of adsorption(mg/g/min)
ΔH	enthalpy change (kcal/mol)
k	constant obtained by multiplying the Q° and b (Langmuir's constant)
k_a	rate constant of BDST model (L/mg/min)
K_F	Freundlich constant which indicate relative adsorption capacity ($mg^{1-1/n}/gL^{1/n}$)
k_s	equilibrium rate constant of pseudo-first-order kinetics adsorption (min^{-1})
k_{id}	rate constant of intraparticle diffusion ($mg/gh^{0.5}$)
K_c	equilibrium constant
k_L	column life factor
$k_{2'}$	equilibrium rate constant of the pseudo-second-order kinetics of adsorption
m	mass of the adsorbent per unit of volume (g/L)
M	adsorbate
MgO	Magnesium oxide

n	Freundlich constant indicative of the nature and strength of the adsorption process and the distribution of the adsorption sites
N_b	bed volumes to breakthrough
N_0	Adsorption capacity of bed
nm	nanometre
ppm	parts per million
Q	Volumetric flow rate
Q°	Langmuir constant represents the monolayer adsorption capacity (mg/g)
q	uptake capacity of the nanoadsorbent (mg/g)
qe	amount of adsorbate adsorbed at equilibrium (mg/g)
q_m	amount of adsorbate adsorbed (mmol/L)
q_t	adsorption capacity of the adsorbent at time t (mg/g)
q_{tot}	total adsorbed metal ion quantity (mg)
R	universal gas constant [8.314 J/mol/K]
R_L	dimensionless separation constant
rpm	Rotation per minute
R^2	correlation coefficient
SEM	Scanning Electron Microscopy
ΔS	Entropy change
T	Temperature
t	time
t_b	breakthrough time (min)
$t_{b,i}$	initial breakthrough time (min)
t_e	bed exhaustion or saturation time (min)
Temp.	temperature (°C)
u	linear velocity (cm/min)
V	Volume of the solution (L)
V_{eff}	Effluent volume (L)
Vb	Volume of the solution treated at breakthrough time
W	Mass of the adsorbent
WHO	World Health Organization
Xm	maximum adsorption capacity of the adsorbent (mmol/g)
XRD	X-Ray Diffraction
XPS	X-ray photoelectron spectroscopy
zpc	zero point charge
Z	Bed height (cm)
Z_0	Critical Bed Depth (cm)
$Z_{0,i}$	initial critical bed depth (cm)
ZrO_2	Zirconium oxide
β_t	Mass transfer coefficient (cm/sec)
β	full width at half maximum
λ	Wavelength