

Table. S1. Structure of Sodium Diethyldithiocarbamate (SDDC) and Its Physicochemical Property

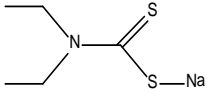
Chemical formular	Structure	Physicochemical property	References
$C_5H_{10}NS_2Na$		m.w: 171.26 g/mol melting point: 93-95°C soluble in water	Kanchi et al., 2014

Table. S2. Experimental Conditions of Adsorption Experiment

Experiment	Metal conc. (mg L ⁻¹)	adsorbent (mg L ⁻¹)	Initial pH	Temperature (°C)	Contact time
Kinetics	50	30	7	25	0 to 48 h
Dosage test	50	5, 10, 15, 20, 25, 30, 35	7	25	48 h
pH test	50	30	5, 7, 9, 11	25	48 h

Table. S3. QA/QC Results during Heavy Metal Measurement Using Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) (n = 7)

QA /QC Results	Cr	Cu	Ni	Zn
RSQ	0.9992	0.992	0.9996	0.9959
RSD (%)	0.82	1.98	1.69	1.98
MDL	0.04 ppb	0.16 ppb	0.05 ppb	0.19 ppb

* Range: 0-25 ppb (0, 0.5, 1, 5, 10, 15, 25)

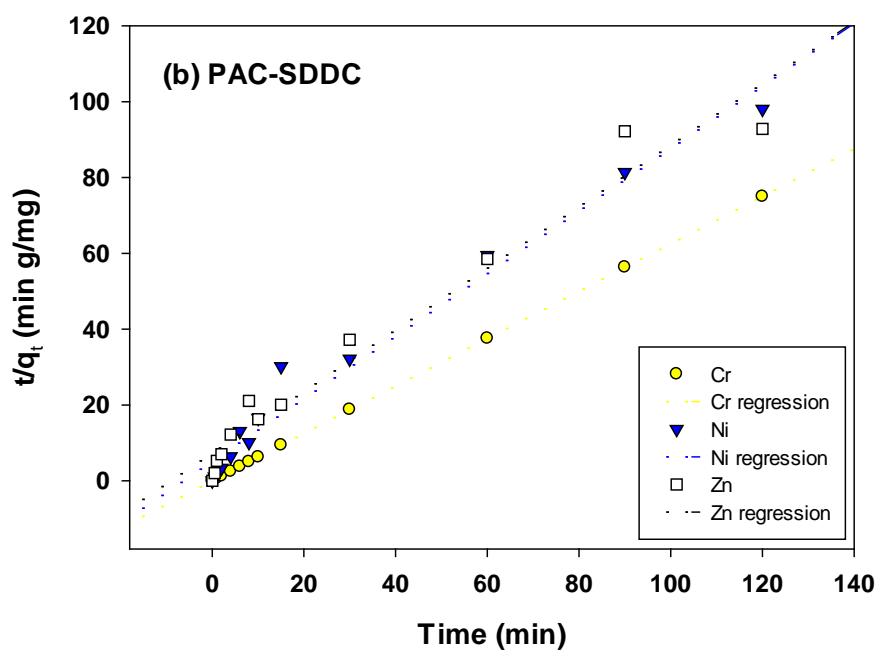
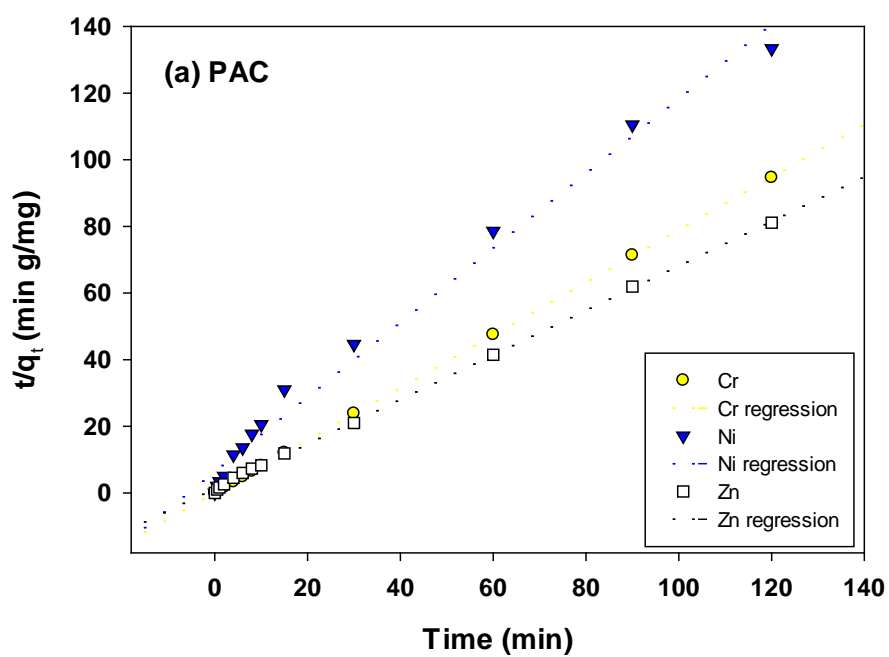


Fig. S1. Pseudo-second order plot obtained by the linear regression method for the adsorption of heavy metals onto (a) PAC and (b) PAC-SDDC.

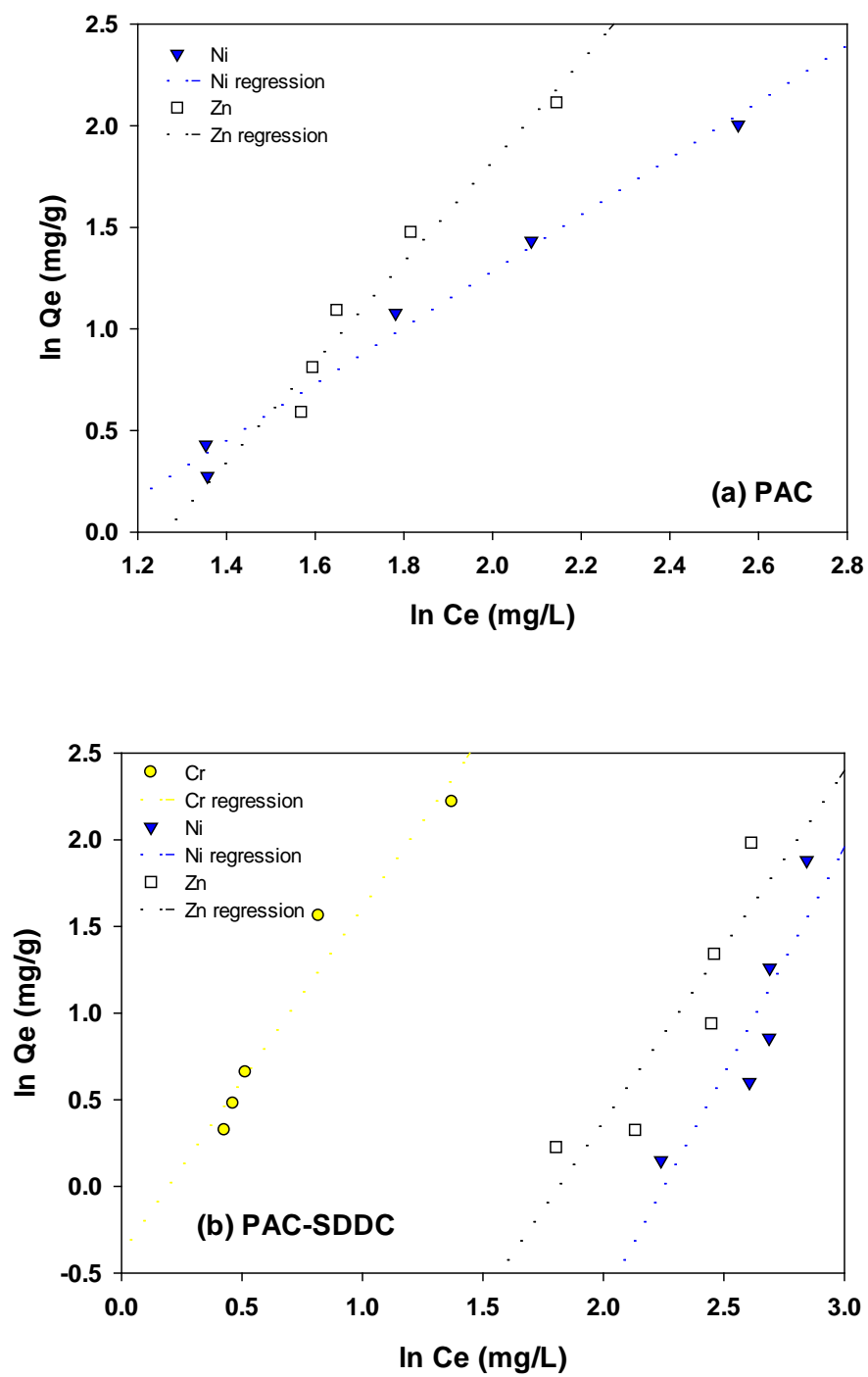


Fig. S2. Freundlich isotherm plot obtained by the linear regression for the adsorption of heavy metals onto (a) PAC and (b) PAC-SDDC.

References

Kanchi S, Singh P, Bisetty K. Dithiocarbamates as hazardous remediation agent: A critical review on progress in environmental chemistry for inorganic species studies of 20th century. *Arab. J. Chem.* 2014;7:11-25.