

Sol-gel silica doped with 3-(2-naphthoyl)-1,1-dibutylselenourea, an efficient precursor for removal of Pb(II) and Zn(II) from water samples

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Properties and FTIR data of xerogel

Color: White; Hydrophilic; Amorphous (XRD); Melting. Point: ($> 345^{\circ}\text{C}$); Decomposition temperature of NDSSG (TG/DTA): 230°C ; Surface Area: $130.0\text{ m}^2/\text{g}$; pore volume: $0.49\text{ g}/\text{cm}^3$; pore size: 16.40 nm , FT-IR $\nu(\text{cm}^{-1})$: $3600\text{--}3200$ ($-\text{OH}$, $-\text{SiOH}$), 3023 (C-H), 1753 (C=O), 1638 (HOH), 1361 (C-N), 1198 (C=Se), $1109\text{--}472$ (Si-O-Si); Elemental analysis (weight %): Si (42.27), O (48.86), C (7.10), N (0.85), Se (0.90); Amount of doped NDSSG (g/g): 0.10 .

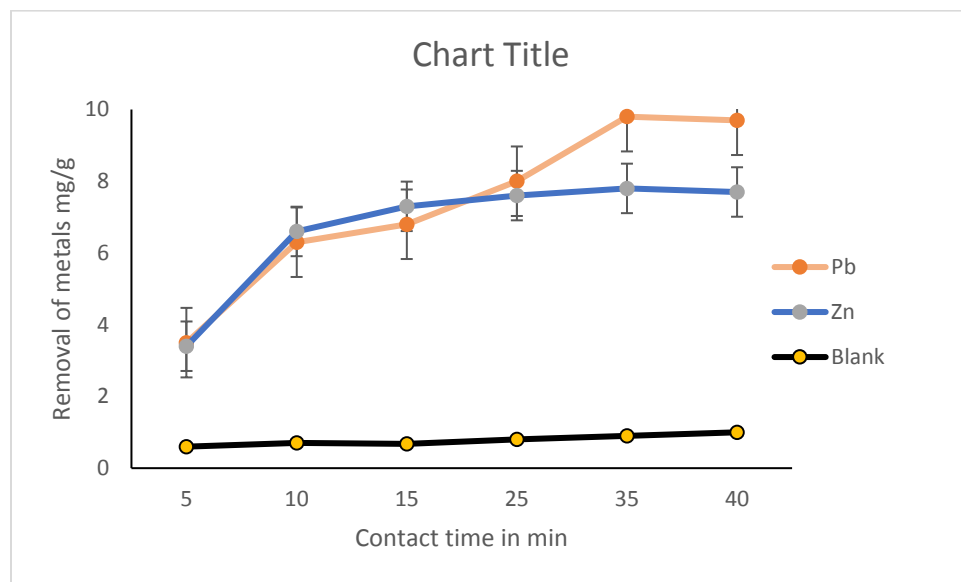


Figure S1 Sorption on the surface of NDSSG as a function of contact time (pH =5, solution volume = 20 mL, NDSSG dose = 50 mg, metal concentration = 35 mg/L)

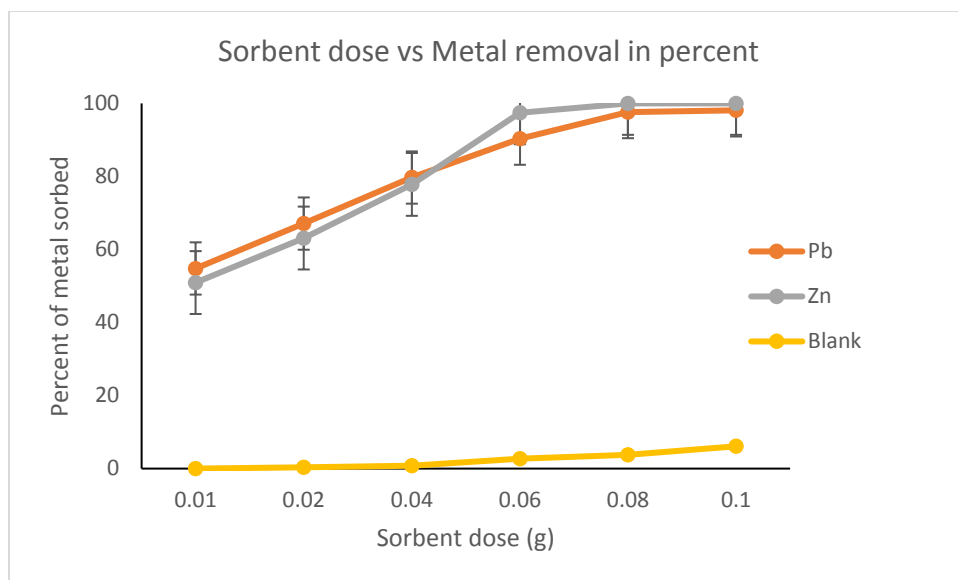


Figure S2 Sorption of metals by changing the amount of sorbent (NDSSG) under optimized Conditions.

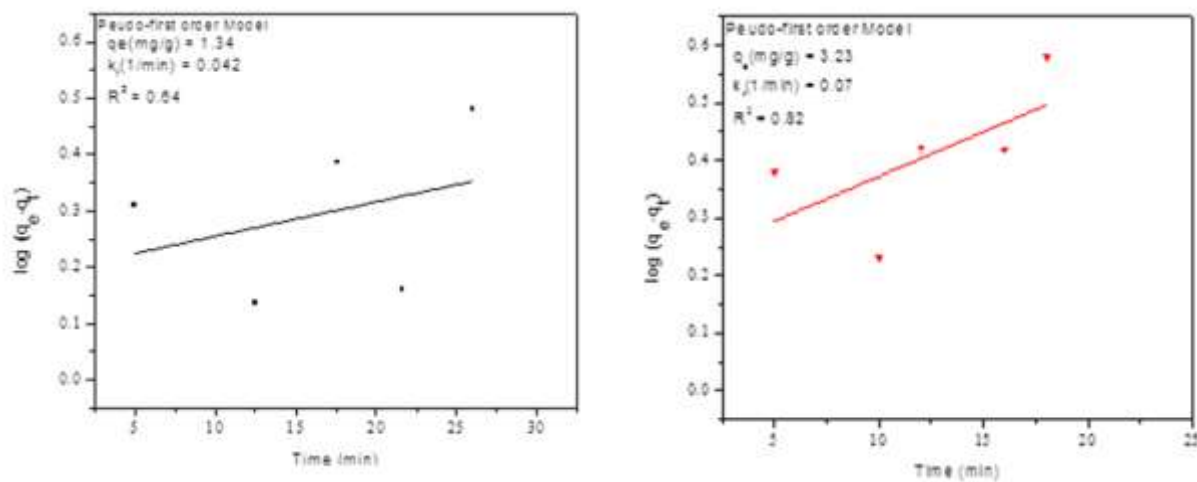


Figure S3 Pseudo 1st Order Plot for Sorption of Lead (left) and Zinc (right) by NDSSG

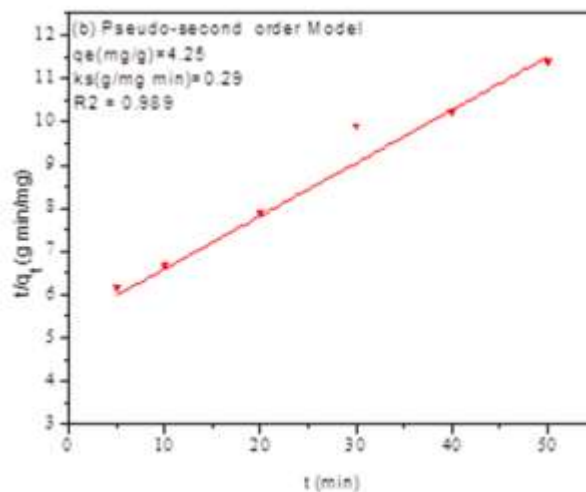
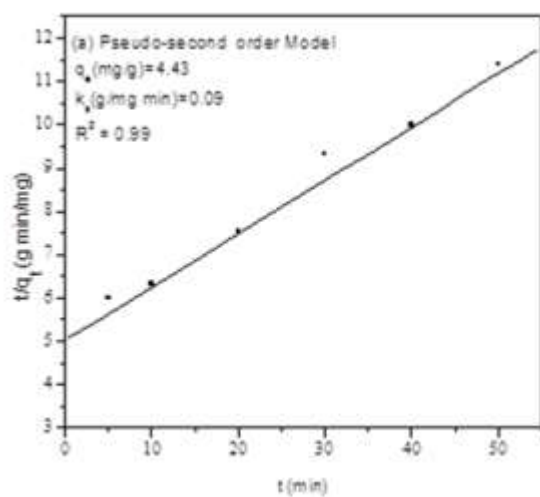


Figure S4 Pseudo 2nd Order Plot for the Sorption of Lead (left) and Zinc (right) by NDSSG

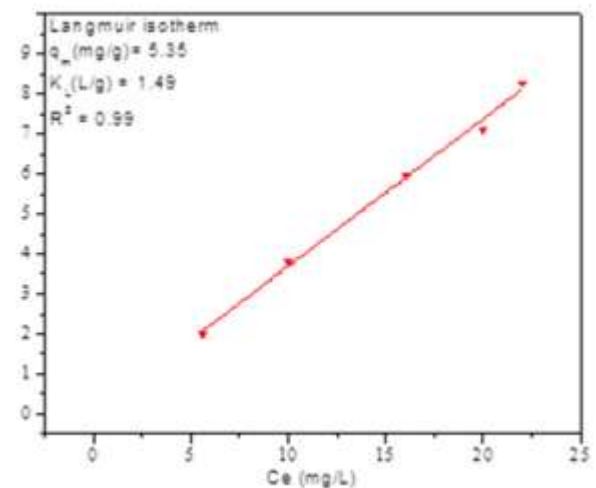
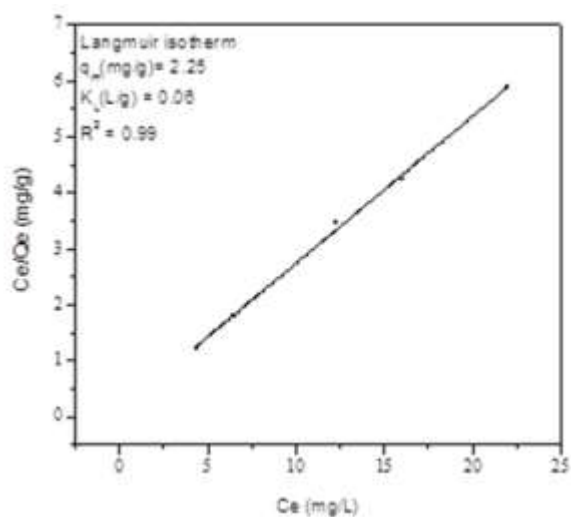


Figure S5. Langmuir Isotherm for the sorption of Pb (left) and Zn (right) by NDSSG

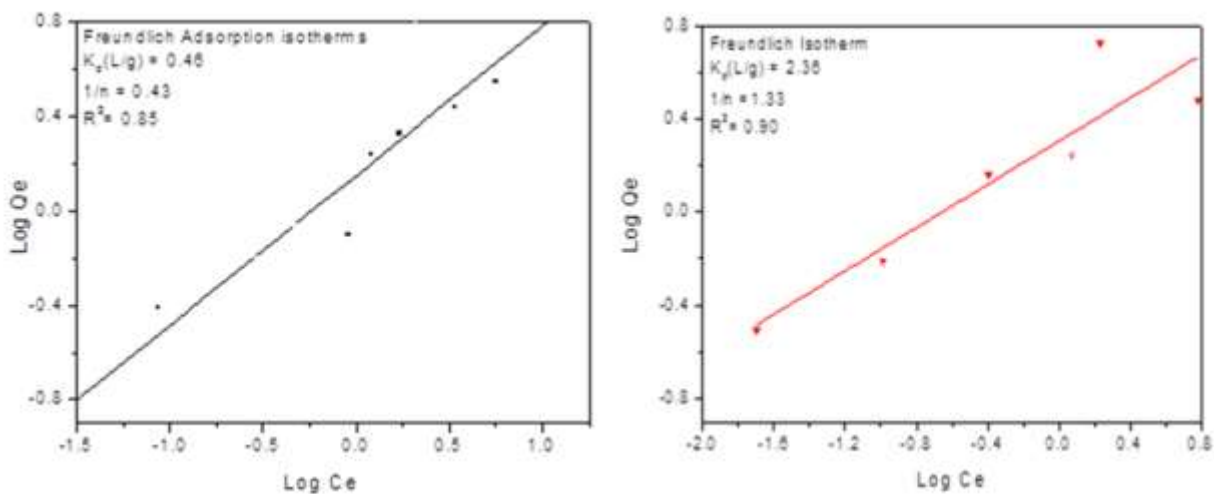


Figure S6. Freundlich Isotherm for the sorption of Pb (left) and Zn (right) by NDSSG