

Supplementary file

Zero valent nickel nanoparticles decorated polyaniline nanotubes for the efficient removal of Pb(II) from aqueous solution: synthesis, characterization and mechanism investigation

Madhumita Bhaumik^{a*}, Arjun Maity^{b,c*}, Hendrik G. Brink^{a*}

^a*Chemical Engineering Department, University of Pretoria, South Africa.*

^b*DST/CSIR, Centre for Nanostructure and Advanced Materials (CeNAM), Council for Scientific and Industrial Research (CSIR), Pretoria 0001, South Africa*

^c*Department of Chemical Science, University of Johannesburg, Doornfontein, 2028 Johannesburg, South Africa.*

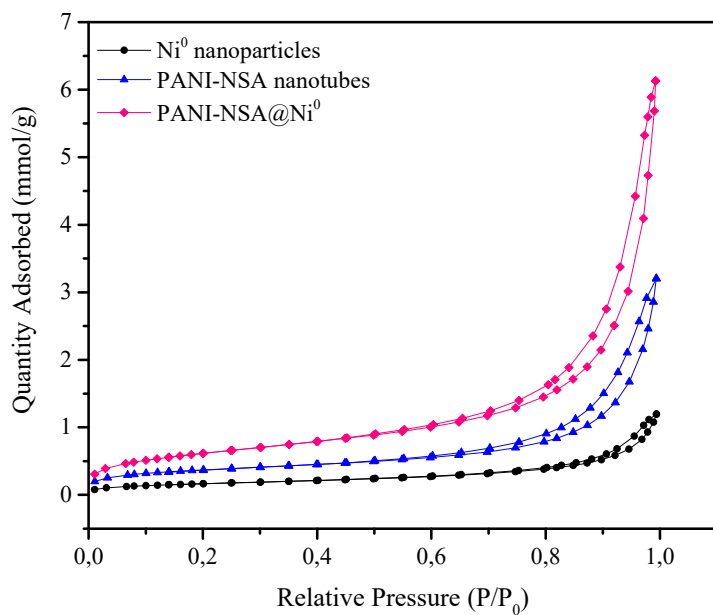


Fig. S1. N₂ adsorption-desorption curves of PANI-NSA nanotubes, Ni⁰ nanoparticles and PANI-NSA@Ni⁰ composite nanotubes.

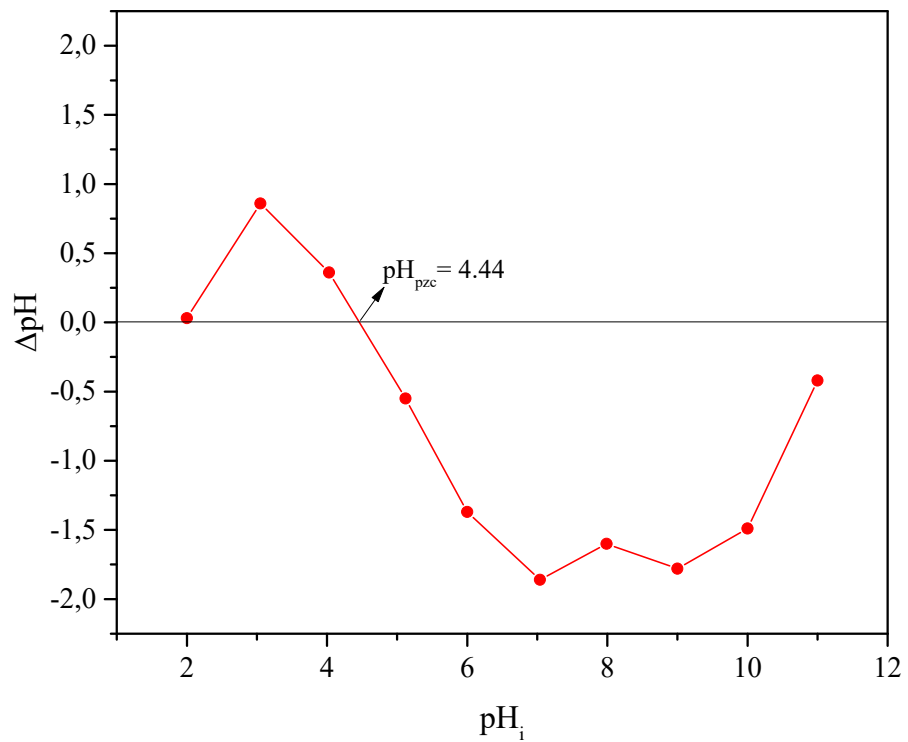


Fig. S2. ΔpH versus initial pH curve to determine PZC of PANI-NSA@Ni⁰ CNs

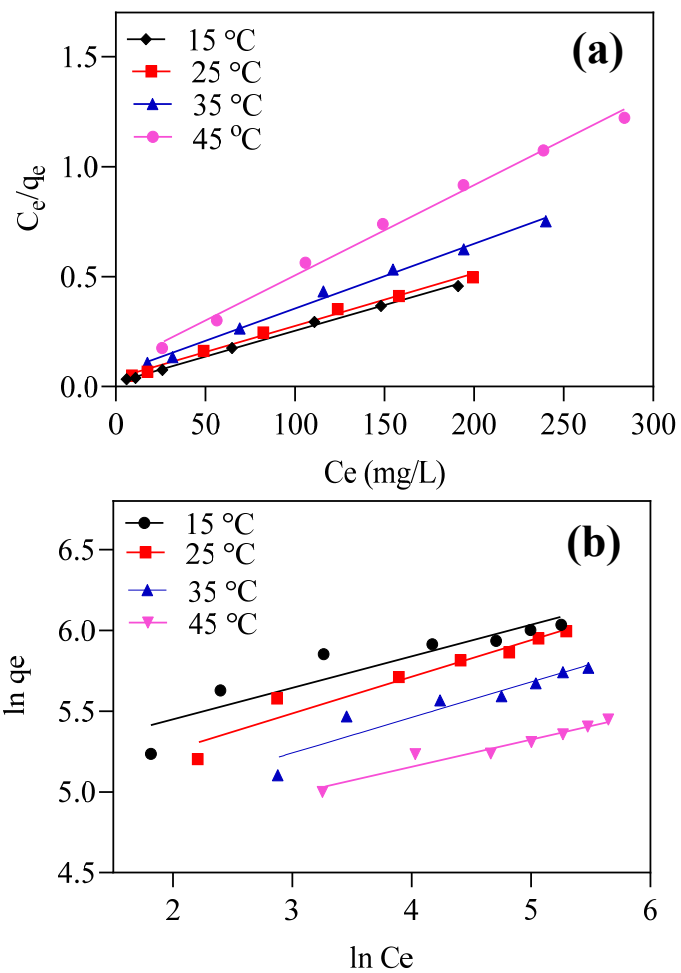


Fig. S3. Fit of experimental isotherm data with (a) linear Langmuir and (b) linear Freundlich model.

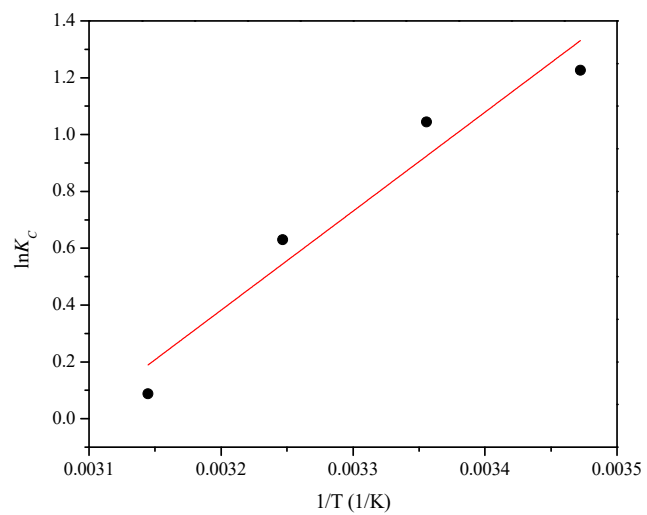


Fig. S4. A plot of $\ln K_c$ vs $1/T$ to determine thermodynamic parameters.