

Quantitative studies of metal ion adsorption on a chemically modified carbon surface: adsorption of Cd(II) and Hg(II) on glutathione modified carbon

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Abstract

The adsorption behavior of model toxic metal cations namely Cd(II) and Hg(II) on carbon surfaces chemically modified by glutathione was investigated as a function of the concentration of Cd²⁺ and Hg²⁺ ions, time and the amount of modified carbon used. Square wave and linear sweep anodic stripping voltammetry was used to monitor the uptake of Cd(II) and Hg(II) ions respectively. Kinetic and adsorption isotherm studies reveal that both Cd(II) and Hg(II) ions undergo similar large adsorption with the modified glutathione carbon material (Glu-carbon).

Author keywords

Adsorption isotherm; Adsorption rate; Cadmium; Glutathione; Mercury; Modified carbon