The Influence of Surfactants on the Adsorption of Heavy Metal Ions Using Inorganic Legands in Selected Contaminated Soil Samples in Palestine

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Abstract:

Heavy metals are persistent pollutants in the environment. Problems associated with the cleanup of sites contaminated by metals have demonstrated the need to develop remediation technologies that are feasible, quick, and effective in a wide range of physical settings. Experiments were conducted to investigate the efficiency of surfactants and ligands on cleanning artificially contaminated red, sandy and white chalk soil samples with heavy metals e.g. (Cd (II), Cu (II), Pb (II) and Zn (II)).

Before contamination, soils were characterized to determine particle size, pH, organic matter content and heavy metal contents.

The results of experimental sorption data fitted very well the Freundlich isotherm model and first order kinetics model.

In this study we have investigated the adsorption of Cd (II), Cu (II), Pb (II) and Zn (II) onto each soil in single and multi-element systems as a function of soil and heavy metal concentrations.

The best pH for adsorption of Cu^{2+} on red soil was found to be 4.0.

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