

MODELING THE Cd(II) ADSORPTION ONTO GOETHITE

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The surface complexation of Cd(II) to goethite (α -FeOOH) at varying concentrations of solid, background electrolyte and Cd(II) has been investigated. The data was quantified according to the generalized version of triple layer (TLM) surface complexation model. In the presence of atmospheric CO₂, it was found that the experimental data of Cd(I) α -FeOOH system could be explained satisfactorily by incorporating both the $>FeOH Cd^+$ and $>FeOCdHCO_3$ in the calculations. However, at excessive concentrations of Cd(II), typically over 13% surface coverages, the TLM predictions significantly underestimated the experimentally observed data obtained for Cd(II)/ α -FeOOH systems.

Keywords: Surface complexation model; cadmium; carbon dioxide