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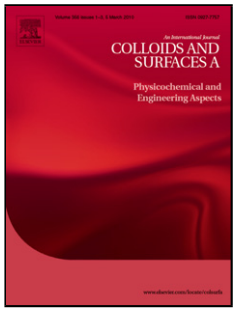

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Effect of pH on adsorption of anionic surfactants on limestone: experimental study and surface complexation modeling

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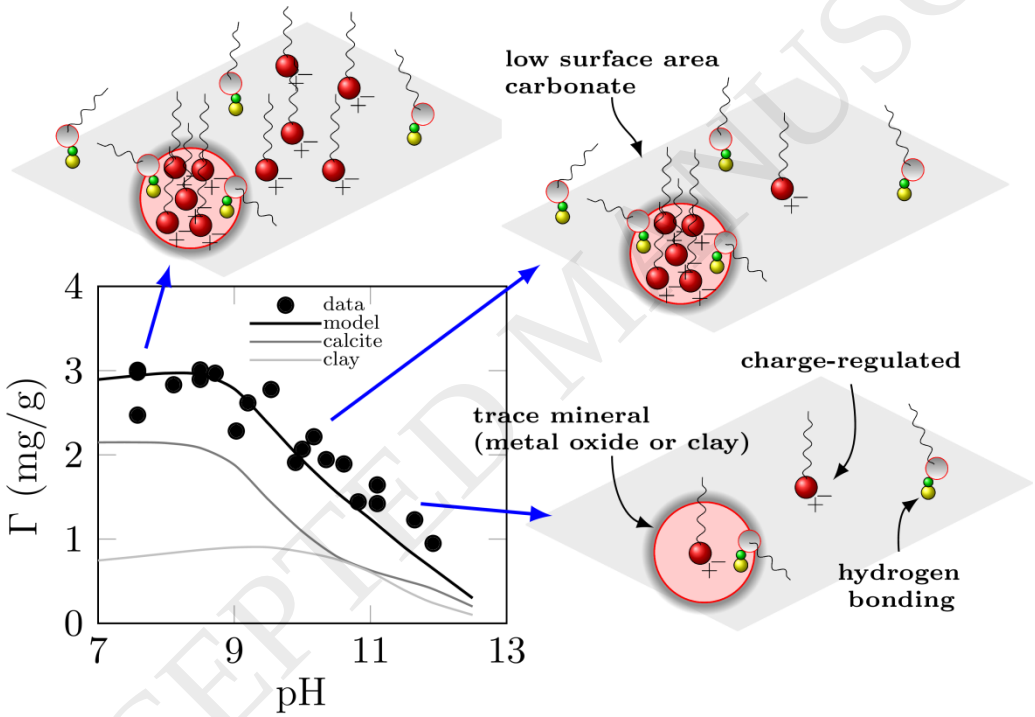
GRAPHICAL ABSTRACT



ABSTRACT

We investigate surfactant adsorption on a model carbonate rock over a wide range of pH and surfactant-to-solid ratios, by both an experimental and a theoretical approach, to obtain a quantitative understanding of how mineral constituents affect the adsorption equilibrium and dynamics. A combination of bulk mineralogy, elemental composition analysis, dissolution behavior, and water ionic composition data were used to characterize the samples' surface heterogeneity. The adsorption of anionic surfactants is 2.4 mg/m^2 at pH of ~8 and decreases approximately linearly with