
Vermiculite as a Model System in the Testing of Double Layer Theory

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Abstract: The microelectrophoretic and adsorption behaviour of lithium vermiculite has been studied as a function of lithium chloride concentration. This was done in an attempt to establish the applicability of such systems to the testing of theories of interaction of flat plates, and in so doing to throw further light on swelling measurements performed on such materials. The studied behaviour, while highly unusual, gave quite good agreement between adsorption and microelectrophoretic parameters and agreed, qualitatively, with some earlier measurements on similar materials.

The observed properties appear to be due to some rather specific structuring effects, either of the oxide surface or of the electrolyte ions. If this is so, these systems are far from ideal models for the testing of the theory of interaction of two uniform flat plates.

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