
Colloid Chemical Control of Kaolinite Properties Related to Ceramic Processing

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Abstract: Experimental data on structure formation in highly concentrated aqueous dispersions of kaolinite were analyzed using rheological models. The physicochemical properties of the clay mineral surface were studied during heating at a range of temperatures, and correlation of acid-base properties with physicommechanical characteristics of the spatial structures formed during heating was obtained. It was shown that interparticle interactions and plastic yield mechanisms under load are dependent upon interfacial phenomena. A method for estimating optimal structural parameters was developed for semidry dispersions, enabling regulation of physicochemical and mechanical properties of ceramic mixtures during processing.

Key Words: Acid-Base Interfacial Interactions • Ceramic Processing • Electroconductivity • Interparticle Interactions • Kaolinite • Optimal Structures • Silicoorganic Liquids • Surface Modification

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