

Surface Energy of C₆₀ and the Interfacial Interactions in Aqueous Systems

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The surface free energy components of C₆₀ powder in the form of compressed pellets were determined by sessile drop contact angle measurements. Based on van Oss-Chaudhury-Good model to Young-Dupre equation, the surface energy of C₆₀ and the contributions of the apolar (Lifshitz-van der Waals) and polar (acid-base) components to surface free energy were assessed. From these components, the surface free energies of inter-particle interaction between C₆₀ and the interaction between C₆₀ and quartz surfaces in aqueous systems were derived. This study aims to elucidate the mechanism of C₆₀ aggregation, the nature of C₆₀-water interaction, and the adsorption of C₆₀ onto surfaces such as soil in aqueous systems.