

Structure and properties of new materials based on fine biopolymers of vegetable origin

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Keywords: biopolymer composition, fine powder materials, cellulose, titanium tetrachloride, titanium compound modified surface, physico-chemical properties, adsorption, polymerization degree, degree of crystallinity.

Abstract

Based on biopolymers of vegetable origin compositions there were obtained fine powder materials with surface-modified titanium compounds. On the example of unbleached softwood pulp we studied the dynamics of Ti(IV) adsorption from solutions of Lewis acid. The possibility has been established for using solutions of titanium tetrachloride, allowing in one processing step within a short period of time to obtain the titanium-containing powder materials at relatively low temperatures and concentrations of Lewis acid. It has been shown that the treatment of softwood cellulose with TiCl₄ solutions in C₆H₁₄ affects the degree of polymerization, degree of crystallinity and crystallographic characteristics of cellulose component of fine powders.