

The properties of the piperillene-styrene copolymer which are nanopatterned of tetraethoxysilane

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Abstract

There is has examined the new materials based on copolymer – vinylbenzene and diethenoid monomer – piperillene, which is nanopatterned of ethylic ether of orthosilicic acids – tetraethoxysilane in this work. It is estimated that over injection tetraethoxysilane in composition derive it decomposition to nanoparticles of silicon oxide. Studied nanostructure of surfaces and influence of composition and nature of the component of polymer compound on physical characteristics. Upon studying of structure of the polymer compound used methods of atomic force microscopy. Water repellent of composition is defined at angle of capillarity of drench. For investigation of adhesive characteristics of obtainable of material used method of breaking of the dial from base. Relative hardness defined with help pendulum instrument M3. Methods of atomic force microscopy it was established presence at surface structure of composition which is modified of tetraethoxysilane, nano-dimensional growths (at the mean one hundred twenty under one square micrometer) with the diameter of two from five nanometers. Herewith changes physical aspects of material: to mount firmness, to growth angle of capillarity of drench. Studied nano-structured composition can find applied appliance. For example, it is using as protective covering with complex of tailored properties, such as high water repellent.

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