

Nanocomposites and nanomaterials

The creation of nanocomposite materials to solve environmental problems

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The creation of new materials for different use with better performance than their predecessors is actual task in applied and fundamental sciences. The synthesis of new and effective nanomaterials for solving such environmental problems as the removal of organic and inorganic pollutants from gas and liquid objects, quality control of gaseous and liquid media is topical in this regard etc. [1,2]. Such materials include nano-sized sorbents, catalysts and photocatalysts: continuously improving their properties in the first place is carried out by regulating the structure.

Metal oxides occupy a central position in sorption-catalytic materials because of their valuable, sometimes unique physico-chemical properties [3]. Therefore, the study of fundamental principles of nanoscale metal oxides synthesis and the subsequent formation of nanocomposites on their basis will lead to the creation of a wide variety of materials with new properties and synergistic effects [4]. At the same time, the establishment of fundamental laws for the purposeful synthesis of nanoscale metal oxides and the creation of new nanocomposites with a regulated structure on their basis will make it possible to obtain nanomaterials with predetermined properties for solving specific problems.

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