SYNTHESIS AND SOME ENVIRONMENTAL APPLICATIONS OF NANOPARTICLES

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ABSTRACT

Nanotechnology is a forthcoming technology that offers promising solution for treating pollution by changing size and shape of the material at the nanoscale. Nanoparticles are the building blocks of numerous approaches for realizing nanostructure materials and devices. The used of nanoparticles in diverse applications make them "tiny heroes" that bring out certain processes which were otherwise unfeasible. This review focuses on synthesis and application of nanoparticles on the ongoing research to the environment. The synthesis and environmental applications of nanoparticles has been reviewed. Nanoparticles are been classified based on their dimension, origin and its structure and their synthesis process can be biological, chemical and physical, their synthesis from chemical and biological (plants and microbes) are listed and discussed. The environmental application of nanoparticles as pollutants remediation is the most promising one due to large surface area and small size, enable then to absorb large amount of pollutants and there are found to have excellent performance compared to other conventional methods in groundwater remediation, treatment of contaminated soils, solid wastes, adsorption of heavy metal ions and adsorption of organic contaminants and greenhouse gases.

Keywords: Applications, Environment, Nanotechnology, Nanoparticles, Synthesis