
Green Nanotechnology: The Solution to Sustainable Development of Environment

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Abstract

The environment is undergoing constant degradation in terms of quality as well as quantity due to various developmental activities occurring for satisfaction of the growing population's needs. Nanoparticles have been existing in the environment since millions of years and also being utilized since thousands of years in many areas due to their ability to be synthesized and manipulated. Literature has shown the ability of nanoparticles for detoxification of environment with respect to their usage in wastewater treatment, dye degradation, etc. However, the conventional physical and chemical methods have also shown to affect environment as it involves use of toxic substances. Hence, the green nanotechnology has gained considerable interest in recent times as an eco-friendly alternative technology for nanotechnology products. This review highlighted the characteristics, goals, and various issues in concern, of this potential field as an ultimate solution for sustainable development of environment.

Keywords

Green chemistry • Nanoparticles • Sustainable development • Wastewater treatment

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1 Introduction

The natural environment consists of physical and biological factors along with their chemical interactions that affect all living and nonliving things. It has been undergoing constant changes with growth of human civilization, which has led to the deterioration and pollution of the environment through depletion of resources like air, water, and soil, destruction of ecosystems, and extinction of wildlife (Johnson et al.