**Green synthesis of nanoparticles : An eco-friendly approach towards environment sustainability.**

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**Abstract:**

Nanomaterials might become extensively utilised in various scientific sectors, including engineering, biomedical science, energy, and the environment. Recently, both physical and chemical techniques have been commonly used for the massive manufacturing of nanomaterials, although these technologies have a negative impact on the environment and also tend to be more expensive. A green approach to nanoparticle synthesis is a feasible and eco-friendly method for synthesising nanomaterials with distinctive characteristics. Biological agents, which include medicinal plants, microorganisms, moulds, and organic matter, can be used as substitutes for toxic chemicals during the sustainable manufacturing of nanomaterials. Biogenic synthesis of nanomaterials is more effective as compared to conventional procedures mainly because of their inexpensiveness, minimal environmental impact, and concern for both the environment and human health. Nanomaterials have a variety of applications, such as catalytic activity, power generation, optical engineering, and biomedical applications. The current article gives a detailed look at the most recent advances in the green synthesis of multiple types of nanomaterials. Furthermore, we highlight nanoparticle applications, highlighting their possible uses in transforming industries such as pharmaceuticals, electrical devices, renewable energy, and ecological sustainability. Overall, this article emphasises the significance of the biogenic synthesis of environment-friendly nanoparticles for environmental sustainability across many different fields.

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