

Nanotechnology as an Interdisciplinary Field of Research: An Overview

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Abstract

1nm is equal to 10^{-9} m i.e about 10 times the diameter of hydrogen atom. It is a very small scale. On an average diameter of a human hair is about 80000 nm. Any technology which refers to the features of nanometer scale is known as nanotechnology. As we move to smaller scale, surface to volume ratio increases as a result of which substance become more reactive. At nanometer scale materials shows appreciable change in their properties. On nanometer scale, materials are found to show improved electrical, chemical, thermal properties e.g. silver has anti microbial properties on this scale, gold changes its color to red at nanometer scale. Two basic approaches being used in nanotechnology are Top down approach and bottom up approach. Nanotechnology is an interdisciplinary field of research. It has application in each and every branch of science. Nanotechnology has application in manufacture of material, electronics, healthcare, pharmaceuticals, chemical plants, transportation, sustainability, energy, national security, according to Prof. C.N.Rao "India can't afford to miss the revolution in nanotechnology, We shouldn't be at the receiving end, when the world is driven by nanotechnology." In this paper, nanotechnology as an interdisciplinary field of research has been discussed. Some uses of nanotechnology in different fields have also been highlighted.

Keywords

Nanotechnology, Interdisciplinary Research, Applications of Nanotechnology