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"The Essential Vision and Utilization of Nanotechnology"

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Abstract:

Nanotechnology is new advanced technology emerge out in very field which holds the all subjects in one concept for the progress and healthy development with respect to environments. This technology open the third eye for understanding each very processes take place in environments in the nano-scale. In this article provides the insights of concept, application of nanotechnology for the more advance technology introduce in betterment of life style of human kind.

Key Words: Nanotechnology, nano-scale and nano materials.

Introduction:

Technology itself having important consideration is that it should modified or update day by day, Nano-technology is new technology for understand the properties of various natural things present on earth in terms of nano-scale measurement's. The study of extremely small structures of natural things is called as Nanotechnology, in Greek word nano means "dwarf" i.e. very small scale or midget size. In simple word understanding and control study of matter in dimension of 1 to 100 nanometres. In the annual meeting of American Physical Society on 29th Dec. 1959 Sir Richard Feynman give the speech on 'There's Plenty of Room at the Bottom", this speech thought is the history start towards nanotechnology. There are two method adopted for controlling the structure of matter at nano-scale meter, one is top down method where larger material convert into smaller atoms up to the nano-scale, another is bottom-up method where smaller atoms or ions assemble to form molecule having diameter in nano-scale. Now day's nanotechnology influence on various science subjects like chemistry, biology, physics etc. in their utility or in application part.

Concept of Nanotechnology:

In 20th century nanotechnology change the monopoly of subjective concept, it introduce the interdisplinary approach for all subjects, when this happen explore a new knowledge and understand in different way all natural things present on the environment. Now day nanotechnology also nano science, it includes some main content such as nanomaterial's &nano devices used in various subjects. Nanomaterial's are of two types nano-crystalline and nano-structured. A material

having crystalline nature with nano meters size is called as "nano-crystalline (NC) material", these materials present in between amorphous materials and conventional coarse-grained materials.A nanostructure materials in biology also called as ultrastructure and these material present in between nano size of microscopic and molecular structures. This nanostructure materials again divided into two types i.e. polymers structure and non-polymers structured, polymers structured includes nanoparticles, dendrimers, micelles & drug conjugates, non-polymers includes carbon nanotubes, metallic nanoparticles, quantum dots & silica nanoparticles.

Applications of Nanotechnology:

1. Nanotechnology in health and medicine

In 2021 although medicinal field reach to advance stage but it faces many problem for tackling on the treatment of various disease like diabetes, cancer, cardiovascular diseases multiple sclerosis and serious inflammatory or infectious diseases, to give relief for the mankind. Nanotechnology insert in medicinal field and it became nano-medicine which mainly concern to resolve questions related to the treatment of various diseases. Nano materials, nano-electronic biosensors are the tools of nano medicine for increasing understanding & mechanism of various diseases which provides new fallow up by early detection and prevention, improved diagnosis and treatment. Example gold nano particles are used to understand the gene sequencing, damaged tissue can be repaired by using artificially stimulated cells and biosensors are used to develop sensors for detecting cancerous cells in the body.

2. Nanotechnology in energy and environment

As population goes on increases the demand of energy also going to increases, so its time think on providing sufficient energy for a growing world without affecting on sources of non-renewable energy. Nanotechnology will play an important role for protecting the environment and provide a new energy sources for fulfil the demand in future perspective. In this technique new method adapted for storage of energy, increasing amount of renewable energy sources, conversion of one energy form into other energy. Solar technology, nano-catalysis, fuel cells and hydrogen technology are the example of less expensive energy production sources which are less affecting on environment. A photovoltaic technique is for synthesize nano porous filters which having ability to reduce the combustion of engine pollutants. Nanotechnology can help in developing new eco-friendly and green technologies that can minimize undesirable pollution.

Conclusion:

This nano-scale study give us very interesting, informative and unbelievable properties of all the natural things occurs on the universe. The ability of

nanotechnology is beyond our imagination for converting today's scenario to next step. By continue research in nanotechnology useful for enhancement of human life. Among the leading sectors such as Medicine, regenerative medicine, stem cell research and nutraceuticals where nanotechnology play important role to change the world. This article gave general introduction and applications of nanotechnology for the students who want to involve in training and education of technology used for betterment of human kind.

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