

Nanotechnology And Its Safe Utilization

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Abstract - The purpose of this paper is to know about "Nanotechnology" a very small thing but it is very useful from this tiny world. This paper gives a brief description of what are nanotechnologies and its advantages and various applications. It is very useful in Computing field, Medical field, Food and Robotics Field. And it also deals with future perspective of nanotechnologies in various Field. It is very small in this world but if we failed to use properly of it, it can be very dangerous for whole person of this world. So, there is many safe utilization of nanotechnology that we should learn about that. In many papers, reports, thesis has been written about dangers about advanced nanotechnology. Most of the problems and risks involve many tiny manufacturing systems that is run out of control. It would be dangerous if we failed to use properly. A controlled Nano factory creates no inherent problems. So, in this paper we can understand the uses of nanotechnology in various Field while minimizing its various risks.

Key Words: Nanotechnology, Carbon cells, Nano eyeglasses, Nano tubes, Nano bots

1.INTRODUCTION

Nanotechnology operates the first level of organization of atoms and molecules of living things and nonliving things. It is very small but it promises that it deals with manufacturing of tiny machines and system of molecular size. It has ability to develop those systems that can be used in very high applications and productions. Generally, we can say that it referred to as general purpose because its advanced version is very useful and impact in many industries and all areas of society.

Now these day science and engineers are the main drivers who can drive this big world very easily in global technologies competition. In this nanotechnology is very useful for both of them. Its impact is very big in our world. We would gain the various types of knowledge in this field.

Nanotechnology is very useful in medical field like cancer patients, mechanical field like manufacturing and robotics, chemical field like many types of chemical products, and also it is very useful in food. In this we used nanoparticles that can't see by naked eyes. It is very risky for handling and

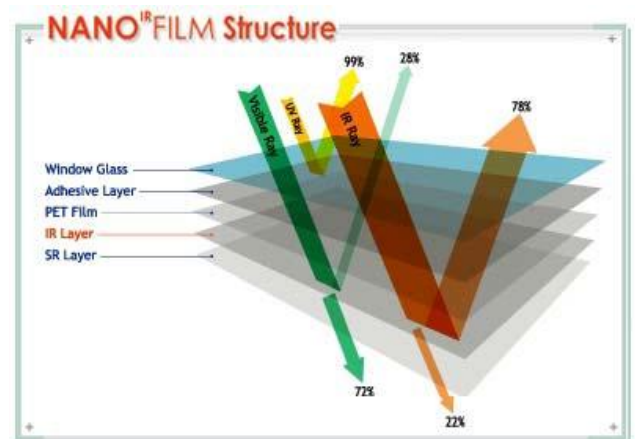
manufacturing. But now these days we have many technologies and scientist who has highly profile skilled and very well understand how to use, how to manufactured, its advantages, disadvantages, and various applications. They know how to use and where use of it properly. But if this technology will go in other hand that has no idea how to handle and use it so it would be dangerous for him and many peoples also. Uncontrolled nanotechnology creates inherent problems.

1.1 Nanotechnology in use

Over past two or three decades scientist and engineers have researched about nanotechnology. In 18-19 century they researched over it and after 2000 its strength is more. Now they have very clear picture about nanotechnology. They well known how to create nanoparticles and Nano scales materials with properties never ended. So, there are some useful techniques of nanotechnology.

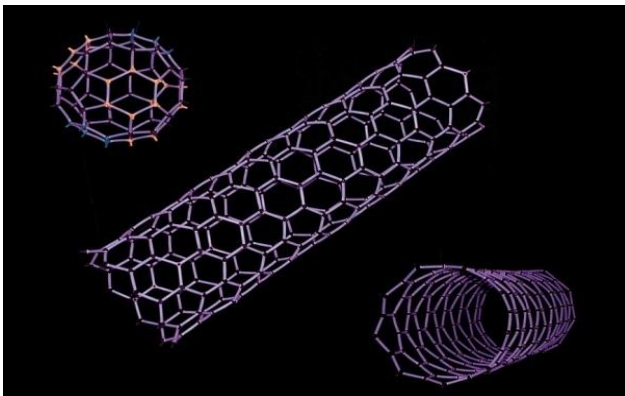
Nano Films

Many Nano scales particles are use in thin films called Nano films which are used for water repellent, anti-reflective and for self-cleaning purpose. Many Nano films are used in eyeglasses for human being, computer screen and mobile display, and camera screen for protect the surface. It will be useful in robotics field also for protecting some internally materials and glass surfaces.



Nano Tubes

It is also called Carbon Nano Tubes (CNT). It is made up of carbon material which is in cylindrical nanostructure. It has been constructed with length to diameter ratio up to 28,000,000:1, which is significantly that it is larger than any other materials. Due to cylindrical carbon molecules it is very useful in many applications. In electronic field, Optics and other materials science field it is useful. It is also used in architecture field. They exhibit extraordinary strength and electrically properties and it is also good conductor of heat.



Drug Delivery Technique

In this Dendrimers is a type of nanostructure that can be designed and manufactured for a wide use of various applications. It is useful in cancer treatment and other disease. Dendrimers carrying different materials and their branches can do several works at a same time. Such as recognizing diseased cells, diagnosing diseased states, reporting location, drug delivery and reporting outcomes of the therapy.

Application under Development

There are many applications which are in under development in space and its work in progress. The scientist and engineers are doing some researches on it. So, some applications which are in under development are given below.

- With the use of carbon nanotubes to make the cable needed in space elevators, so due to this we can reduce the cost and time to sending the materials into orbit.
- Some materials that are made up of carbon nanotubes and nanoparticles to reduce the weight of spaceship while increasing the structural strength.
- To develop Nano sensors that can give the information about the large area of planets such as mars for trace of water or other chemical things for further use.

- Using Nanoparticles build a light weight of solar cells that use the pressure of light from sun reflecting on the mirror like solar cells to propel a spacecraft. Due to this we can solve the problem of having more fuel to lift the space craft.
- Producing thrusters for space crafts that use some devices called NEMS (Nano electronic mechanical system) to accelerate the nanoparticles. Due to this we can reduce the weight and complexity of thruster system.

Applications

- It is useful in medical field like cancer treatment and other disease treatment.
- For manufacturing purpose.
- To protect the glass surfaces of computer, eyeglasses, mobile screen and camera glass by Nano films.
- For making of Optical fiber, electronics field and material science field.
- For making of big machines in industries.
- In aircraft field.
- It is very useful in architecture.
- For robotics purpose.

2. Risk of Nanotechnology

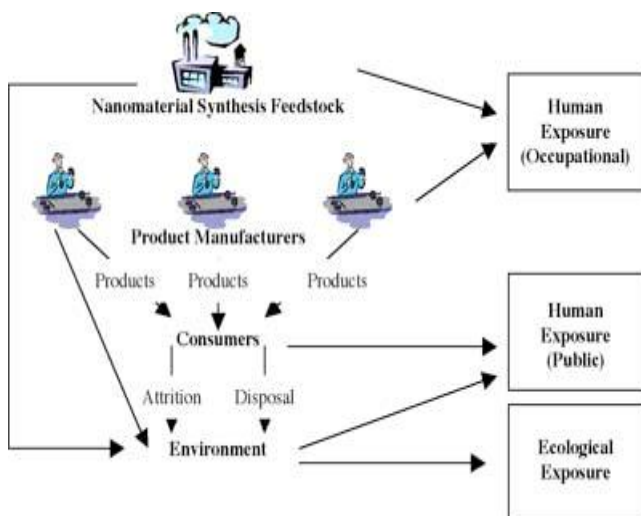
If there are some good features of nanotechnology there are also some risks in it. If we failed to control the nanotechnology there is some inherent problems in our life. It is very hazardous for human being and also environment.

Environmental issues

We use the nanoparticles in many industries for making various things. So, there is some wastage which is released from the industries and comes in contact with soil, river and disturb the plant life and disturbing the environment. Now these days we use waste particles by recycles and decomposed due to this there are many pollutants released in air and water. So, that's why our environment disturbs. It would be hazardous for human life and plant life.

Health issues

It depends upon the environmental issues. If soil, water and air will be polluted by using of nanoparticles in many industries. So it will directly effect on human life or human health. Many industries release toxic gases which is mix in air and if we inhale this, it would be very dangerous for human and animal lungs. It is very hazardous and cause many diseases.



Using Nanotechnology Safely

A safe and controlled Nano factory design and build the perfect product and approved product, while refusing unapproved product. It causes less inherent problems in human life. For this highly profiled scientist and engineers are capable to research something on it. An uncontrolled nanoparticle causes much disease, more pollution, harm human life and more maintains. On other way to secure a personal Nano factory is to build a limited numbers of designs at a time. Due to this we can reduce inherent problems. On this the factory could not build anything else. This is very simple and reliable.

In other way every time if any companies have to make some products they can ask to PN (Personal Nano factory) for manufacturing something. Due to this we can handle the wastage products and release less hazardous chemical wastage. Check the products properly and we can handle the wastages and pollution.

3. Conclusion

Today, many scientist and engineers finding new ways to create high level of nanotechnology which we can use in our daily life. It is very useful in automobile application, medical field, electronic field, and in future there are also some applications which is in under development. In this paper we can study about the nanotechnology and its applications. After this we had studied about the risks of nanotechnology which is very dangerous in human life and plant life. So, we have to be uses its safe utilization. In further there are going many researches in laboratory, colleges, library and other places for understand and cause less harm in human life. So, we can say that nanotechnology can make our life easy but on the other hand we can also say that it is very risky if uncontrolled Nano Factory is use in place of controlled Nano factory. It makes daily life easy but it is hazardous also.

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