NEEDS OF WELL ADMINISTRATION & MANAGEMENT IN NANO TECHNOLOGY

Prof.(Dr.)Sandeep Kumar, INSTITUTE OF SCIENCE AND MANAGEMENT, PUNDAG, RANCHI

1. INTRODUCTION:-

Nano is a Greek word

Nano means one billionth

1 Nanometer- 10^{-9} meter

Technology:-

Technology means scientific knowledge for the manufacture of a product or rendering of a service.

Science produce knowledge. Technology helps to produce wealth. Technology may be considered as improving something already being done satisfying a long pending need and creating the possibility of a new need.

The scope of technology may be explained as a resource which compact knowledge skills and means for using and controlling the factors of production to produce, maintain and distribute goods and services for which there is an economic and social demand.

Today things are getting smaller and smaller whether it is a device or god get. This world which is becoming a ‘global village rather than the big continent or Countries or states. People want see sleek and compact objects.

Nanotechnology and nanoscience are the tools which help as to make object smaller and compact the science or engineering of tiny machines (whose diameter range from 1 to 100 nanometer) is known as Nanotechnology. A nanometer is one billionth of a meter. Top down and bottom up are the method up on which nanotech works. A personal nanofactory (PN) is newly proposed appliance. Something that might sit on a counterpart.

The nanotechnology is an emerging field of research and development. It is dedicated to increasing control over material structure of nanometer size (0.1,100mm), Nano a Greak word means dwarf indicates a one billionth part thus, a nanometer is equal to one billionth of a meter.

Nanotechnology is a highly energized discipline of science and technology. Nanoscience is the most ambitious and highly potential field and technology. Nanoscience is the most ambitious and highly potential field and presently emerging as most effective component in the service of mankind. Nanoscience and nanotechnology are emerging multidisciplinary area of research and development.

Nanotechnologies offer new imaging technologies that provide high images not possible with current devices; along with new method of treatment. Nanotechnology has the potential to radically change the study of basic biological mechanism as well as to significantly improve the prevention detection diagnosis and treatment of diseases.

Nanotechnology is defined as the manipulation of matter at nanoscale (10,000) times smaller than the diameter of the human hair ,enabling the discovery of new phenomena and applications Nanoscience is understood more broadly as the science behind the ability to employ nanotechnology.

Nanotechnology was first introduced in 1959, in a talk by the Nobel Prize winning Physicist Richard Feynman. Entitled “there is plenty of “Room at he Bottom” Feynman proposed using a set of conventional size then using that new set of arms to manufacture an even smaller set and so on until the molecular scale is reached.

The field of nanostructure science and technology is a broad and interdisciplinary area of world wide research and development activity that has been growing explosively in the past few years. While and understanding of the range and nature of functionalities that can be accessed through nanostructuring is just beginning to unfold, its tremendous potential for revolutionizing the ways in which materials and products are created is already clear. It is already having a significant commercial impact, and it will very certainly have a much greater impact in the future.

2. **RATIONAL OF THE STUDENT:**- Modern Product requirements: - maximum efficiency and power with small sizes components, which meet emission regulation.

1. High Performance
2. Clear Emission Regulations
3. Lower operating potentials
4. Lower power dissipation
5. Higher reliability and greater endurance in contexts (Although some values are more resistant to nuclear electromagnetic pulses (NEMP)
6. Economic
7. Less Risk
8. Safety
10. Challenges should be complete

a) Meeting global energy needs with clean solutions.
b) Providing abundant clean water Globally
c) Increasing the health and longevity of human life
d) Maximizing the productivity of agriculture
e) Making powerful information technology available everywhere
f) Enabling the development of space.

Maximum efficiency and power with small size.

Nanotechnology is applicable to Physics chemistry, Biology, Engineering, Medicine, Biotechnology, Electronic, Social Science, Material Science, Computer Science etc.

At first there were only a few of them but recently their numbers have multiplied widely Newspaper headlines magazine articles, journal paper, even television commercials now are loaded with those big “nano” words nanometer, nanoscale, nanosecond and nanotechnology to name a few. It seems that every week some organization is announcing yet another “nano conference”. Why all the excitement? Because in recent years as scientists have begun to get a handle on controlling matter at the nanometer scale. They have recognized that these skills can be used to make new materials with unique and useful properties- perhaps leading to a range of commercial applications in sensing electronics and other areas. Impressive laboratory

demonstrations of nanoscale dexterity have been widely reported in the scientific and popular press thereby drawing the attention of more scientists. Companies and technology invertors.

As implied in introduction to Nanoscale technology this collection of technologies can benefits us in many ways, including better health, faster computers and greater awareness of our environment. In some cases, nanoscale technologies will provide only an incremental improvement over existing technologies. But in other cases, they can open the door to new techniques, products and even fields Materials will become stronger; sensors will become cheaper, more sensitive and detect a broader range of phenomena; computers will become faster and more efficient; medicine will improve in many ways. Nanoscale technology does not generally create unfamiliar types of risk.

Nanotechnology will be a bottom up technology building upward from the molecular scale. It will bring a revolution in human abilities like that brought by agriculture or power machinery molecular mechanics consists of simulating the behavior of an object (e.g. a nanotube) by calculating the interaction of every atom with its neighbors for example, this powerful technique enables us to calculate how tubes of different diameter are distorted when placed on substrate.

In the past two decades, chemists have been able to create modify and control many different types of molecular machines. Many of these machines carry a striking resemblance with our everyday macro-scale machines such as gears, propellers, shuttles etc. Not only this, all of these machines are easy to synthesize artificially and are generally more robust than the natural molecular machines. Most of these machines are organic compounds of carbon Nitrogen and hydrogen with the presence of a metal, ion being required occasionally. Electrostatic interactions covalent and hydrogen bonding play essential role in the performance of these machines. Such artificial chemical machines are controllable in various ways- chemically, electrochemically (through irradiation by light). Some of them are even controllable by more than one ways, rendering more flexibility and enhancing their utility.

3. REVIEW OF THE LITERATURE:-

The father of nanotechnology was Fynman. He had given basic concept of nanotechnology. In all field such as medical science,engineering,biotech, social sciencscience,

working in this technology very fast. But in management and administration field ,less literature is present. Only U.S.A government working on administration and management of nanotechnology. NNI is playing vital role in this field.

4. OBJECTIVE OF THE RESEARCH AND HISTORY OF THE STUDY:-

Every time a technology solves a problem, it create new problem. Almost any technology is subject to use, misuse, abuse and accidents. The more powerful a technology is when properly used the worse it is likely to be when abused. Any powerful technology in human hands can be subject of accidents. Nanotechnology and molecular manufacturing will be no exception. Indeed, if molecular manufacturing replaces modern industry, and if its nano-technological, products most modern technologies,then the most future accidents will have to involve nanotechnology. Because of this research society gets perfect tools to maintain administration and management in nanotechnology.

It's a promising arena for long and short-term investments, which is already cutting costs and improving products and processes in countless sectors, enhancing everything from cosmetic creams to fuel efficiency. Nanotechnology's vast reach helps explain why it's so difficult to nail down its actual potential. The market is ill-defined, misunderstood and easily distorted. "Nanotechnology is a huge building and there are so many doors," says Patrick Hunziker, a cardiologist working on medical applications of nanotechnology at the University of Basel hospital in Switzerland. "Every one you open leads to so many more questions." Commercial success lingers behind some of those doors, but the impulse to add the 'nano' suffix to a business plan only to boost its appeal can lead investors and entrepreneurs astray.

This study will explore the secrets of setting up a successful nanotechnology company, and reveal some of nanotechnology's unique hurdles and winning strategies. The report breaks down into four sections. The first defines our terms, and examines what nanotechnology is. The second examines the commercial potential of nanotechnology. The third identifies the reason why nanotechnology is so complex. And the fourth and final section provides practical advise on how start-ups can win in this space.

"There are a few areas that from time to time demand commentary from a venture capitalist and nanotechnology is one of them. We have drawn on the knowledge and expertise from our

considerable international network to shed light on what it takes to create a successful business in the field of nanotechnology. Furthermore, through hour relationship with the Institute of Nanotechnology, we have brought together an incredible list of international contributors to this paper. In summary, we believe this paper provides a unique and commercial insight into this exciting field."

"The Institute of Nanotechnology is recognized as the focus for activity on the nanoscale, having been involved since 1994 in bringing together the nanotechnology community worldwide. Using the contacts of the Institute, 3i has brought its experience and knowledge to bear in this very fragmented and unfortunately much hyped field, to identify where real business potential lies and the realities of what is on offer".

5. **Research Methodology**:-

(a) Observation

(b) Data collection

(c)Questonaires

(d) Interview

6. **LIMITATION:-**

(i) Timely non availability of published data from various government and other agencies also diminishes the researchers motive to complete his research on time.

(ii) Defective library management and functioning at many places wastes much time and energy of the researchers while searching for books,journals report etc.

(iii)Partial decisions on specific issues without proper timings and budgeting will result in unsatisfactory solution.

7.CONCLUSION:-Now a days whole world giving attention on nanotechnology.Some intellectual people said that "man will become immortal".(According to Hindustan,news paper).So, management should play its own responsibilities,because only management is the such type of field which relate administration,rules and regulations,risk and safety etc.Because of

this research and information socity will be beneficial. As I consider,if I am contributing myself on this topic,then I can say that I am responsible social worker.

8. REFERENCES:-

i)Carroll,J.S.: 2001, Social Science Research Methods for assessing societal implications of Nanotechnology in: M.C. Roco and W.S. Nanotechnology, Dordrecht: Kluwer,pp.-188192

ii) Fielder, F.A: Reynolds,G.H.: 1994, “Legal Problems of Nanotechnology:An overview, Southern California Interdesciplinary law journal,3,593-629

iii) R frazier,G,Frensky,W.,Reed,M.,An overview of nanoelectronics” Texas instruments to Technical Journal,July August 1989,pp,15-20

iv)Vincent, B,:2001 ,’ The construction of discipline: Materials science in the united states: Historical studies in the physical and biological sciences.,31,223-248.