

# Computer Technology: Nano Computer

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## ABSTRACT

*This paper presents the overview of Nanocomputers and also some discussion about Nanotechnology as Nanocomputers are based on this technology. Nanotechnology is the study of manipulation and manufacture of extremely minute machines or devices. These devices are too small to the point of manipulating the atoms themselves to form materials. We can also say that the nanotechnology is self replication, which makes an effective route to truly low cost manufacturing having more storage capacity.*

*This paper is an attempt to cover the following:*

- Overview of nanotechnology
  - Nanocomputers and its technologies
  - Special attention given to a certain important area in nanocomputing.
  - Upcoming technologies coming in future having small scale and larger data storage capacity.
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## 1. Introduction

### Nanotechnology:

Nanotechnology is usually described as the growth and utilization of technology on an incredibly small scale. Particularly, a technological creation ranging in size from 0.1 to hundred nm. A Nanometer is really a millionth of a millimeter. It's all about creating things atom by molecule and atom by molecule. Manufacturing items created from an atom, the home of those items is determined by the way those atoms are arranged.

When K. Eric Drexler popularized the term 'nanotechnology' during the 1980's. Drexler spent the following 10 years examining and describing these amazing products, and answering accusations of science fiction. The U.S National Nanotechnology Initiative was produced to fund the type of nanotech: their definition includes something lesser than hundred nanometers with novel properties.

### Nanocomputers

Nanocomputer is the phrase given on the pc and that is actually smaller compared to microcomputer. With computer systems being an essential part in present day society, nanocomputers would be the simplest and likely path where computer development might continue. The size of its might be rough or even could be smaller than a Credit card. Nanocomputer is usually made in ways that are several i.e. Mechanical, Electronic, Biochemical along with Quantum Technology.

The basic meaning of a nanocomputer is a laptop that is calculated in nanometers. In other words, Nanocomputers are all those whose elements are too small enough to be assessed in nanometers and whose dimensions are microscopic.

Before mentioning the kinds of Nanocomputer, we need to proceed through the Moore's Law Based on Moore's Law, the quantity of transistors will doubles after every 18 months which

are equipped on the silicon chip. The transistor is the central element of a computer nowadays.

(More transistors = larger computer memories plus more effective computers) Presently, microprocessors have much more than 5 billion transistors.

By the year 2020, the trend line of Moore's law states that there ought to be a camera nanometer feature size.

## 2. Nanocomputer Technologies

- **Electronic:** It works in a fashion much like how microcomputers work. The primary difference in between them is physical size. Now a times, Transistors are compressed into tiny Integrates silicon chips therefore processor is able to have far more storage capability and also bigger energy facility. In Electronic nanocomputers, the idea of nanolithography has been used. Nanolithography would be the art and research of a selection of methods for producing nanometer scale structures by which sizes are within the order of nanometers (units of 10<sup>9</sup> millionths or meter of a millimeter).
- **Chemical & Biochemical:** Biochemical engineering is that that is closer to world that is real and are present in nature. Biochemical computers store and chemical and system information in regards to chemical structures. It's as same as the systems for animal brains which are not correctly understood by human beings. Engineers should know how to get specific molecules and atoms so that calculations are usually performed very well and are controlled.
- **Mechanical:** Mechanical nanocomputers are those that uses small moving components called as nanogears therefore info could be decoded. We are able to say that physical computer systems do the job exact same as Mechanical calculator's works. Computers and machines will be created by the Mechanical Positioning of molecular building blocks or

atoms, one particular atom or maybe molecule at a time. This procedure is recognized as 'mechanosynthesis'.

- Quantum: The Quantum nanocomputers are designed to keep every bit of details as being a quantum state of the pc. By way of Quantum mechanics, Information will be saved as the spin or perhaps state of an atom. Technology on this type has already been under development in the form of single electron memory (SEM) and quantum dots. Instantaneous electron energy states are hard to foresee as well as harder to control.

### 3. Future of Nansotechnology

- Nanotechnology has potential that is substantial in creating smaller as well as smaller computers.
- Far greater quantities of info will be kept in the same volume of space.
- In the coming days, all of the computers in the planet might go with the area associated with a square inch. Such effective data storage capacity will be of use that is great inside the area of medical research and business in various areas.
- Nanocomputers would have an excellent chance of the entertainment business. Various online games and also virtual reality methods might be made with such great information storage and energy saver capability.
- In upcoming years, the technology was recommended because of the evolution of Nanorobots.

### 4. Conclusion

It's well worth pointing out the trends in the improvement of computer hardware are extremely constant for the last fifty years. The Nano computers that we learned will provide advantages that are many to not only medicine, but to many

people living on this Earth. To begin with, simply the desire of early cancer detection and also much better ways of therapy is able to enhance the spirits of the countless cancer patients and their good ones. Nevertheless, this unit isn't simply going to raise people's hopes, though it is going to enhance cancer treatment greatly.

Because the unit of ours is going to allow physicians to single out simply cancerous cells, it won't eliminate the wholesome people. This is a huge further advancement within the healing of cancer since probably the most well known remedies for cancer was chemotherapy. In chemotherapy, radiation was would destroy the cancerous cells within the entire body, though the healthy people would in addition be damaged. This will leave patients tired and very weak. It'd additionally go out of the individual with a weakened immune system, when the body's immune system of theirs was extremely vulnerable because of cancer within the very first place. Nevertheless, with the accurate destruction of just cancerous cells, this might be prevented or at the very least significantly decreased. Additionally, in chemotherapy, many people will have the side effects with no health benefits. They would be extremely exhausted and there'd be no improvements in the cancer of theirs. The task of ours is going to dispose of these cancer and problems won't be an incurable condition, but will become a lot more like an extinct disease.

No matter of what extrapolation of polls or fashion could suggest, we must maintain firmly in your mind that just how long it requires will depend on what we do or even do not do. A concentrated effort with information acceptable to the magnitude of the job would speed development. In case we do little or perhaps focus resources on short-run objectives, fundamental developments could be much delayed.

In order to quote Alan Kay: "The simplest to foresee the future is inventing it."

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