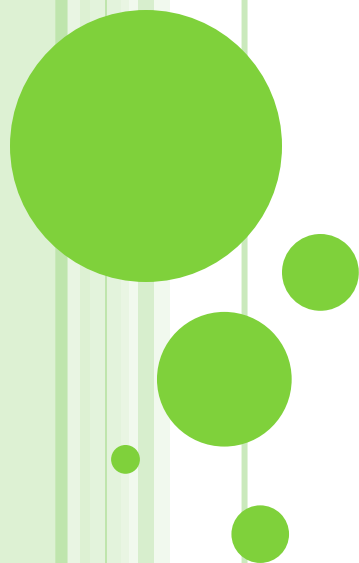


*MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC  
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# Nanotechnology



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# PLAN:

- History.
- Application Area.
- Main task of nanotechnology.
- Nanofactors.
- Conclusion.
- References.



# HISTORY

? Legendary fabulous wooden horses and carpets, barefoot, sun loungers and hand mirrors, which make the imagination real and are now considered "ancient things". Nanotechnology also came to life as a result of such imagination and fun. In 1986, Eric Drexler, a student of his futuristic essay The Machine, first used molecular technology. He combines his imagination with the ideas of the science fiction writer Stanislaw Lem and creates a general image of the "Living Environment". According to this assumption, in the 21st century nanobots are introduced into every substance and every organism, and mankind becomes a conscious computer with the surrounding world. This idea seems to have been created earlier than Essay Drexler. The term Nanotechnology was first introduced in 1974 by the Japanese physicist Norio Taniguchi.

# APPLICATION AREA

? Genetics, medicine, cloning, microbes on bacteria and engineering, electronics, etc. D. Obtaining new materials for production, improving the quality of all types of machines and products to a new level can only be achieved through the development of nanotechnology. In Kazakhstan, in 2003, the research of nanostructures on the fundamental research program of the Ministry of Education and Science of the Republic of Kazakhstan began. The National Laboratory of Nanotechnologies was established at the Institute of Physics and Technology, which is part of the information technology park in the village of Alatau, near Almaty, for consolidation and cooperation with scientific groups that have made significant progress in nanotechnology research. Scientific research is conducted on the basis of specific projects.

# MAIN TASKS OF NANOTECHNOLOGY

- ? At the present time, scientists have identified three main objectives of the recently carved nanotechnology:
- ? First of all, proceeding from this, atoms can be organized at their own discretion, that is, to materials that have special qualities.
- ? Secondly, it is supposed to organize the production of electronic circuits that have active elements in the same volumes as individual molecules or atoms.
- ? Third, scientists are looking for mechanisms and robots that are equivalent to a molecule, that is, a nanomachine.



# NANOFACTORS

In 1991, Professor Sumio Iijima noticed a long-carbon cylinder-nanotube. The nanotube was a few nanometers in diameter, and ten feet tall



The nanotubes are a molecule consisting of millions of carbon atoms. The nanotubes that were 100,000 times less than the thickness of the human hair were rarely made of solid material. They are 50-100 times stronger than steel and six times less density.

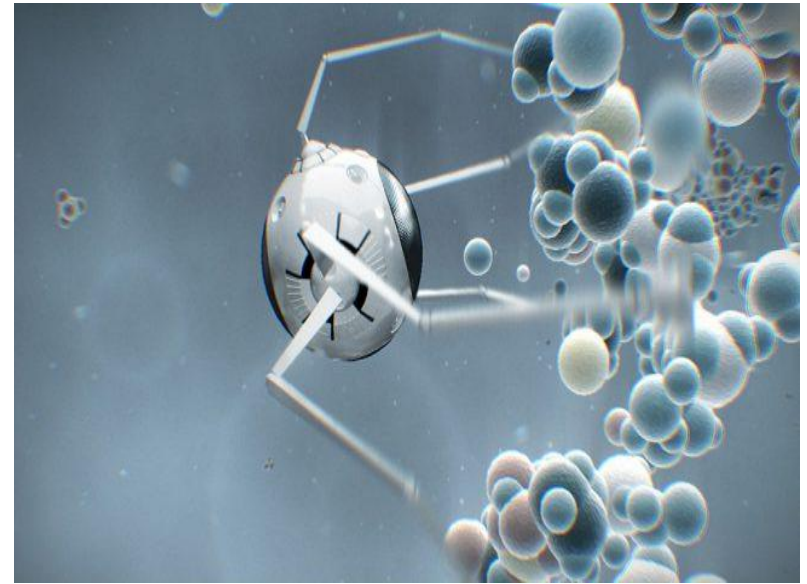


# CONCLUSIONS

The development of modern electronics is on the way to reducing the size of devices. On the other hand, classical methods of production approach their natural economic and technological barrier when the size of the device decreases slightly, but the economic costs increase exponentially.

Nanotechnology is the next logical step in the development of electronics and other high-end industries.







# REFERENCES.

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*RusNanoNet is an information and analytical portal of the Russian national nanotechnology network.*

*Scientific and educational center "Nanotechnologies" FGBOU*

*HPE MSSU*

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***THANK YOU FOR ATTENTION!!!***

