

THE ACTUAL SITUATION AND DEVELOPMENT TRENDS OF NANO-ELECTRONICS TECHNOLOGY

O.J. Jäger

Technische Universität München, Lichtenbergstr. 4, German.

Abstract: The era our country is currently living in is an era of knowledge economy, and the development and application of various scientific and technological measures are also relatively fast. On this basis, nanoelectronics technology has emerged. With the application of nanoelectronics technology in various industries in our country, Its application has gradually attracted the attention of relevant staff in various industries and has also shown certain advantages. Therefore, its research has certain practical significance.

Keywords: Nanoelectronics technology; Actual situation; Development trend; Research; Analysis

1. FIRST, ANALYZE NANO-ELECTRONIC MATERIALS

Based on the research, development and application of nanoelectronics technology, nanoelectronics technology has shown relatively strong potential in various fields within our country. After comprehensive research work on nanoelectronics technology is carried out from all levels, nano Electronic technology will definitely be widely used in various industries in my country, and On this basis, it evolved into the needs in the process of people's daily production and life-related work. Necessities used.

The main results obtained during the research and application of nanoelectronics technology are: Nano-semiconductor materials, nano-silicon film materials, nano-silicon materials, etc. In actual application In the process of using, nano-silicon materials have the most obvious advantages. Compared with previous electronic Various types of materials used in the technical field, the process of practical application of nano-silicon materials. The advantages demonstrated in the process can make our country's socio-economic development process move forward. The objective requirements put forward in the process have been met, and their performance has been demonstrated in the process of practical application. The advantages are as follows:

The distance between silicon molecules is relatively small, so the electronic signal transmission work is carried out The time spent in the process is naturally relatively small. After treating this material to a certain extent, Based on the application, not only can the operating efficiency be improved to a certain extent, At the same time, the energy consumed in the process of signal transmission can be put into is placed at a lower level; the accuracy is stronger and the stability is stronger, at the same time Basically, it will not be affected by external environmental factors during actual operation. Naturally, people's requirements for the performance of electronic materials can be met. become The cost is relatively low, and research on nanoelectronics technology is carried out in various countries around the world.

2. ANALYZE THE PRACTICAL APPLICATIONS OF NANO-ELECTRONIC MATERIALS

Components manufactured based on the application of nanomaterials to a certain extent The resulting applications have experienced two development stages: large-scale integrated components and integrated components. After a period of time, nanocomponents appeared in front of people's eyes, so the products made of nanomaterials In the process of practical application of components, integrated components and large-scale integrated components can actually be The advantages of the software are presented before people's eyes. In the process of advancing the integrated and large-scale development process, During the process, nano-size level requirements were put forward for the size of nano-components, such as the size Very small single-electron transistors have one bit of information in just one bit of electronic signal According to the data, the information presented in front of us is that modern electronics with relatively high efficiency Technology may not necessarily consume too much energy during practical application.

Nanoelectronics technology is currently playing an important role in the field of modern medicine in various countries around the world. applications obtained. The current field of modern medicine in various countries around the world Among them, nanotechnology is the most widely used. General situation in the field of medical research There will always be some very subtle things that are difficult to observe based on the application of ordinary microscopes to a certain extent. However, with the application of nanotechnology to a certain extent, some very subtle things can naturally be observed. Where nanosensors are actually manufactured based on the application of nanoelectronics technology to a certain extent, the electrochemical information involved in organisms can be observed based on the application of nanosensors to a certain extent. High-tech products that are conducive to the development of medicine are manufactured based on the application of relatively modern nanoelectronics technology to a certain extent. These products mentioned above are advancing the development process of China's nanoelectronics technology. The role played in the process is more important. Based on a certain degree of integration with biomedicine and electronics, nanoelectronics technology is obtained. This technical

measure itself not only has certain research potential, but also shows very strong utilization value. Biomedical electronics is actually the product based on the integration of biomedicine and electronics. In the process of China's medical electronic equipment transforming towards miniaturization in the near future, biomedical electronics has great potential for development.

3. ANALYZE THE FUTURE DEVELOPMENT DIRECTION OF NANOELECTRONICS TECHNOLOGY

Developing in the direction of graphene, graphene is not only a relatively thin but also relatively strong nano-scale material. Compared with other conductors used in the field of nanoelectronics technology, it does not operate at room temperature. The electron propagation speed shown under the situation is relatively fast. Because graphene, a nanoelectronic material itself, also has certain characteristics, it will definitely play an important role in advancing the development of nanoelectronics technology in the future. The composition of graphene is compared with other materials. There are also certain differences. When these components collide with each other, there will be no energy consumption problem. Therefore, in the process of advancing the development of nanoelectronics technology worldwide, graphene is a very important research direction.

4. CONCLUSION

All in all, in the process of development and research of nanoelectronics technology in China, it has gradually been widely used in the fields of electronic materials, electronic components, and biomedicine, and has achieved relatively good results on this basis. At this stage, various countries around the world have paid full attention to nanoelectronics technology, and the intensity of research and development and application work carried out for it has been realized to a certain extent. Nanoelectronics technology will definitely play an important role in the next few decades. It will enter a new stage of development. Under the premise that nanoelectronics technology is widely used, it will definitely bring more convenience to the lives of our people.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

REFERENCES

- [1] Zhang Jian. Research on the development and prospects of nanoelectronics technology. *Chinese and Foreign Entrepreneurs*, 2013, (02): 125.
- [2] Liu Changli, Shen Xueshi, Zhang Xueao, Liu Shulei. Development and prospects of nanoelectronics technology. *MicroNano Electronics Technology*, 2011, (10): 617-622.