

The Application of Computer Technology in the Production of Modern Industrial Enterprises

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Abstract

The intelligent production technology in the usual sense is mainly a new economic development method based on the manufacturing industry, combined with the extension of the electrical and electronic, information, energy and other fields. It runs through the entire process of product production and manufacturing. It has the distinct advantages of energy saving and environmental protection, and can also improve the quality and added value of products, and construct the core competitiveness and market adaptability of the enterprise. The full integration of computer technology and chemical intelligent production can not only optimize the adjustment of the structure of the chemical industry, but also promote the continuous advancement of industrial production in the direction of intelligence and remoteness, and open up a broader market space. And platform. Therefore, the combination of the two should also receive more attention and attention in the new era.

Keywords

Computer Technology; Modern; Chemical Industry Production; Application.

1. Introduction

The computer revolution activities carried out in the last century prompted human society to gradually enter the era of information and civilization development. The chemical industry is the pillar industry of the national system. At the same time, the application of computer technology is of great value. This also makes computers gradually become an indispensable tool and element for the development of the chemical system. Nowadays, computer technology has penetrated into different branches of the chemical process. Especially in the new era, the application of computers in the chemical industry has developed rapidly, which is an inevitable trend in the development of the chemical industry.

2. Application of computer technology in the intelligent production of chemical industry

2.1. Process various data in practice

There are many factors that affect the quality of chemical engineering. Data processing is the most critical factor in the quality factors. Due to the instability of the chemical reaction itself, the constant changes of the external environment will also have a corresponding impact on the result of the chemical reaction. For example, factors such as high pressure or low pressure, high temperature or low temperature of chemical raw materials will have corresponding effects on various data. Therefore, in order to promote the quality of chemical engineering to a new step, professional designers should adopt scientific and effective methods in the process of reasonable processing of various data to minimize the error range of the data. Reasonably control the various errors that may appear in the data, and at the same time use the empirical data as the comparison data of the actual data, effectively analyze the root cause of the problem,

and then use the appropriate method to deal with the problem, so that the overall design of the chemical engineering can be achieved Improve vigorously.

2.2. The monitoring process of chemical enterprises

There are many small and medium-sized enterprises in the domestic chemical industry, and the main way to control the chemical production process is single-loop control. Because this process is relatively backward, the control level is low, and it cannot maintain long-term stability, it needs to be technologically transformed using computer monitoring technology. Computer monitoring technology mainly covers two parts: software and hardware. In the automatic control system of chemical enterprises, the application of monitoring software is the most common. The chemical monitoring software system can complete different types of work such as image design, signal acquisition, and dynamic alarms in the operation process. , So that the production process of chemical companies can be monitored in real time.

2.3. Application of computer technology in chemical instrumentation and automation system

The two parts have also been effectively updated in the process of optimization. The development process roughly includes 4 stages. The first is the pneumatic instrument, which is PCS, and the second is the electric unit combined analog instrument control system, which is ACS. The first system is based on the electric instrument as the core carrier, and then the computer control system, which is DDC, which is based on direct digital control and has obvious modern characteristics, and the last is the distributed control system, which is DCS. It is based on the microprocessor as an important aid. Under the guidance of the development of the first four generations, the process control system has gradually developed in the direction of the fifth generation, which has made a qualitative leap in control speed, control level or control performance. Among them, the first three generations of process control systems mainly involve the three most basic levels of on-site instrumentation level, control device unit level, and factory level. When the fourth-generation system is applied, the enterprise layer is added on the basis of the previous three generations, and the original functions and performance are expanded, highlighting the distinctive characteristics of integration, and gradually moving towards the direction of a composite information platform. Conversion. In general, the function of the 4th generation process control system is already very superior. It can not only break the limitations of time and space, realize remote control, but also collect and transmit information in time, realize multi-loop adjustment and intelligent control, and strengthen the process. Sexual and logical control

2.4. Chemical simulation

Simulation is the use of system models to carry out research and analysis of the nature and laws of the system, as well as experimental activities. It is a systematic method that can make more traditional teaching content more vivid and vivid, and visualize chemical instruments and equipment such as pipelines and valves. Show it to the students and lay the foundation for the improvement of teaching efficiency and quality. In the chemical system, the value of computer chemical simulation technology is mainly reflected in the process of chemical teaching and production practice, such as using dynamic mathematical models to simulate experimental operations on chemical engineering principles, and using interactive animations to simulate the on-site practical operation process. So as to form the same result as the real experiment. During the production practice, students can use the computer simulation system to conduct computer operations to understand the chemical process of the factory, so as to in-depth study and master the operating principles of the chemical process, strengthen the awareness of process and engineering, and improve the ability of problem analysis and solution.

2.5. Application in chemical production

The dissemination and application of information technology has created new supply and marketing relationships, and the close connection between enterprises and the market has created new efficiency solutions and maximized economic benefits through effective business models. At the same time, information technology also plays an important role in instrument testing. After using information technology to configure programs, precision instruments can operate without supervision. The use of this technology can release a large amount of labor and provide appropriate technical support and guarantee for chemical production. Of course, the ultimate manifestation of information technology is still in production. In view of the production characteristics of chemical companies, their safety issues have always been a major issue. The investment of computer technology can scientifically detect the toxic components in chemical raw materials, ensure that the production process is always within a controllable range, and has the advantages of safety and stability. For example, DCS software can be used in the actual production process to classify and control the production process, thereby Help.

3. The application trend of computer technology in the intelligent production of chemical industry

3.1. Diversified expansion of functions of miniature smart sensors

Under the promotion of this situation, materials and equipment will show the characteristics of intelligence, and can realize continuous all-weather monitoring, expand the scope and business of monitoring, and cover all parameters. In addition, the micro smart sensor also has a warning function, which can analyze the specific location of equipment damage during the supervision of chemical production, and guide technicians to analyze the cause of the failure in order to take follow-up solutions and methods. At the same time, automated repair and diagnosis functions are also the development direction of chemical intelligent production. These two functions can reduce the probability of safety accidents and avoid interruption and stop of production and processing. In the future, chemical companies will be more market-oriented, and according to changes in customer needs, introduce more advanced technology, with detection and control technology being the most prominent, the purpose is to optimize the control of processing and production processes, and to promote management towards The development of the direction of integration highlights the advantages and characteristics of its own intelligent production.

3.2. Chemical production based on computer technology

In the chemical production system, the future application of computer technology focuses on artificial intelligence and robotics. The logical analysis of the computer system is closely integrated with the computing power and the chemical production system to create an artificial intelligence system in the chemical industry, which plays a huge role in the process of processing and processing chemical knowledge; in the chemical industry, robots have comparisons Broad development prospects. In the process of familiarizing the chemical production process and controlling the functions of the chemical system, modern intelligent robots can be used to replace personnel to perform corresponding work in harmful environments such as pollution and corrosion. As a result, the health of the chemical production process can be improved.

4. Concluding remarks

With the rapid development of science and technology, the use of information technology in our daily production is becoming more and more common. Chinese chemical companies should also track social development trends and combine advanced technology and production processes

to complete the transition from traditional natural models to advanced intelligent models. For example, the application of digital transmission technology can ensure data interaction between different industries and platforms. This will not only help promote the popularization of chemical technology, but also help improve production efficiency, enhance the basic competitiveness of enterprises, and support the vigorous development of China's chemical industry and social economy.

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