

Application and Development of Mechanical Manufacturing and Automation Technology

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Abstract

In the current wave of rapid economic development, machinery manufacturing industry, as the technical equipment supply industry of the whole economic development, is also advancing rapidly with the pace of the times. Its development level represents the industrialization degree of a country or region. With the rapid development of the machinery manufacturing industry, the international market competition is becoming more and more intense. The major enterprises pay more attention to the development of mechanical products. The wide application of automation technology is of great significance to the whole machinery manufacturing industry.

Keywords

Mechanical manufacturing; automation technology; analysis; development.

1. Overview of Mechanical Automation

Mechanical design and manufacturing and its automation is a new subject developed in continuous exploration. This discipline integrates a variety of technologies for control, so as to ensure that the quality of mechanical system is better, the function is stronger, and its reliability and stability are also enhanced correspondingly, which makes modern machinery intelligent and humanized, and brings technical revolution for industrial production, This is beyond the reach of traditional machinery. Mechanical design and manufacturing and its automation will continue to improve due to its huge potential and broad development prospects.

2. Present Situation of Mechanical Design, Manufacturing and Automation in China

2.1. Mechanical Design and Manufacturing and Automation Technology Is Backward

Several industrial revolutions in the world have strongly promoted the technological progress and improvement of mechanical design and manufacturing, and led the development direction of world industry. However, the results of the industrial revolution are controlled by several developed countries and have a certain monopoly. In the process of learning from them, China has only learned the surface technology, but not the core technology and the latest development technology. Secondly, China's scientific research level and education level are not perfect, lack of innovation consciousness and scientific research spirit, leading to the rapid development of China's mechanical design and manufacturing technology, mechanical design and manufacturing and its automation brand is in a backward position in China's economic market, China pays attention to reform and opening up, realize economic globalization, strengthen foreign trade, and vigorously introduce foreign production technology and products. Although, to a great extent, this has promoted the reform of social system and the development of social economy in China, but also made many foreign product brands flow into China and stay in China.

However, in the social environment at that time, China did not make good protection measures for its own brands, nor did it make effective control measures for the introduction of foreign brands. Therefore, it is generally believed that foreign scientific research level is advanced, and the quality of products produced and developed is the best and most trustworthy. As a result, most of China's market consumption economy flows abroad, which not only has a certain impact on China's economic system, but also has a great impact on China's social system. At present, China has begun to build machinery design and manufacturing brands. Many well-known brands such as BYD in automobile industry, Haier in household appliance enterprises, Huawei in mobile phone industry and other well-known brands have emerged, which reflect the image of "made in China"

2.2. In Traditional Teaching, the Main Function of Laboratory Is to Coordinate with the Teaching of Professional Courses

According to the needs of professional courses, set up corresponding experimental items, and conduct relevant experiments on a regular, fixed-point and fixed-time basis. The experiment is carried out according to the experimental scheme given by the teacher. The traditional management system of laboratory use basically restricts the students' experimental behavior. It is difficult for students to redesign the experimental scheme according to their own opinions, which is very unfavorable to the cultivation of students' creativity. It is not in line with the "innovation driven" in made in China 2025. Student experiment is not only a tool to verify knowledge, but also an important promoter of cultivating students' innovation ability. In order to improve students' interest in learning, students should enjoy the autonomy of the experiment. First, we should set up the type and quantity of curriculum experiment reasonably, distinguish the experiment of primary and secondary schools, and optimize the students' experiment on the premise of ensuring the curriculum requirements. Secondly, we should reform the opening time of the laboratory, let students choose the experiment project and time independently, and design the experiment plan independently, which can not only consolidate their knowledge, but also cultivate the exploration spirit of the students. Integrating curriculum design and improving students' innovation ability is one of the important measures to consolidate the knowledge learned. In the course design process, students make full use of their own professional knowledge, train students' thinking mode of solving problems, which plays a good role in promoting the improvement of students' comprehensive ability. However, it is impossible to set up corresponding curriculum design for each major course. The number of existing curriculum designs is very large, so it is difficult for students to take enough time to seriously treat each curriculum design; at present, there are many students in each teaching class. Because the design and guidance of each semester are not detailed enough, the quality of curriculum design and curriculum design in each semester will be reduced. There is a close relationship between professional courses. The integration of closely related curriculum design will make students master the relevant professional knowledge more comprehensively, and the integration of different curriculum design will greatly improve the students' innovation ability; meanwhile, the integration of curriculum design will reduce the workload of students and teachers, so the integration of curriculum design will reduce the workload of students and teachers, The integration of curriculum design will greatly reduce the workload of students and teachers, and will greatly reduce the time for students to take every professional problem seriously, and also enable teachers to provide more detailed explanation for each student.

3. Application Prospect of Mechanical Automation Technology

Mechanical design, manufacturing and automation should also take the road of sustainable development. Environmental pollution has become a very important problem in today's society. A few years ago, we blindly pursued economic interests at the expense of the environment. Now

we are experiencing the bad effects of environmental pollution, especially in the Beijing Tianjin Hebei region, which has been hit by haze. From the perspective of food industry machinery automation, there is a big gap between China and foreign countries. Machinery industry itself is a kind of industry with serious pollution. Low cost automation technology is developing rapidly with great potential, good prospect, less investment and quick effect, which is in line with the current industrial level of China. But in the process of development, we should save energy, reduce material consumption, and take the road of green and sustainable development. In short, the economy should not be at the expense of the environment. Mechanical design and manufacturing and automation need strong self-study and innovation ability. Theory is the cornerstone of practice. Therefore, in the study of this major, we should pay attention to the study of professional knowledge. Only by laying a good professional foundation can we learn how to use it in practice. With the rapid development of modern social technology, it is far from enough to have good professional quality. We should improve the ability of innovation on the basis of professional knowledge. Only by combining theory with innovation ability can we keep up with the development of science and technology. Mechanical design and manufacturing and automation is not only the processing of mechanical parts, but also involves a wide range. Not only must have the basic skills of drawing, calculation, experiment, testing, literature retrieval, basic process operation and other basic skills, but also have the necessary professional knowledge in a professional direction of the professional field, and understand its scientific frontier development trend.

3.1 the inevitable development direction of informatization and informatization construction of machinery manufacturing industry in the 21st century is impossible. In contrast, in China's mechanical design and manufacturing industry, most enterprises' mechanical design and manufacturing industry is still in the 1990s, and has not kept pace with the pace of the times to develop the information technology of mechanical design and manufacturing industry. The traditional mechanical design and manufacturing industry only relies on human resources and some simple mechanical equipment, which has too much variability and operability, and the market efficiency is not high. At present, most of the mechanical design and manufacturing industry in China has not broken through the shackles of current rules, and has not reached the level of modern operation.

3.2 compared with some developed countries in the west, the mechanical automation technology in China started later. China's mechanical automation technology is gradually established after the western countries have achieved a certain scale of development. In the early stage of the development of mechanical automation technology in China, due to the lack of excellent relevant professionals and excellent technical guidance, China took a lot of detours in the establishment of mechanical automation technology, which wasted a certain amount of time and financial resources. Moreover, in the exploration stage of mechanical automation technology, due to the lack of copying the development mode of other countries according to China's basic national conditions, the development direction of mechanical automation technology has also deviated. Due to the above difficulties, the development of mechanical automation technology in China is far behind that of some western developed countries.

3.3 mechanical manufacturing automation technology is relatively backward compared with western developed countries. China pays less attention to mechanical automation technology and lacks corresponding technical support for mechanical manufacturing enterprises. Some western countries attach great importance to the protection of intellectual property rights. Once an individual or an enterprise applies for an automation technology patent, any activity involving the technology must be approved by these people, otherwise, they will bear the corresponding punishment. However, China's support and protection of technology is far lower than that of western countries. Therefore, many workers engaged in mechanical manufacturing

automation technology are not willing to devote themselves to the research and development of technology. So the technology we use is almost the same, there is no innovation.

4. Conclusion

In the fierce competitive market, enterprises should continue to improve their market competitiveness by expanding production. Nowadays, mechanical design and manufacturing and automation technology are widely used in daily life. However, enterprises should constantly improve the existing production system, further promote the development process of China's industrial enterprises, improve the level of national economy, and make contributions to the prosperity and development of social economy

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