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RESEARCH ON TECHNOLOGICAL DEVELOPMENT OF NEW ENERGY MACHINERY MANUFACTURING AND TECHNOLOGY

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Abstract: Our country is in a rapid stage of social and economic development. The machinery manufacturing industry plays an important role in social and economic development. As China's economic strength continues to increase, China's machinery manufacturing industry continues to develop and improve. As an important technical means, new energy has significant energy-saving effects when applied in the field of machinery manufacturing. It is an effective technical means to improve resource utilization efficiency and reduce pollution. Therefore, the main focus on new energy machinery manufacturing Conduct research and analysis on the technological development of manufacturing and technology.
Keywords: New energy machinery manufacturing; Process technology development research

1 NEW ENERGY MACHINERY MANUFACTURING AND PROCESS TECHNOLOGY

In the process of continuous social and economic progress and development, computers, new energy With the joint support of various technologies such as sources and material technology, new energy machinery manufacturing Manufacturing and process technology continue to mature and develop. Analysis of new energy machinery manufacturing and engineering The development of art and technology and understanding of advanced technical means have a positive role in promoting the social and economic development of our country.

1.1 New Energy Machinery Manufacturing Process Technology

1.1.1 Nuclear power technology

In the process of social reform and development, my country's nuclear power industry has shown healthy and rapid development. development trends. At this stage, there is significant development in the fields of nuclear power, nuclear fuel and new energy. Build a new clean energy industry with coordinated development of nuclear technology and energy-saving services pattern. At present, my country's third-generation nuclear power technology has met the highest internationally recognized safety standards and has the conditions for mass construction. The mature development of nuclear power technology has a positive role in promoting and influencing the scientific and technological development of industrial manufacturing.

1.1.2 Solar photovoltaic power generation technology

my country's solar photovoltaic power generation technology has high cost and material problems in its application. Problems such as insufficient production capacity of silicon materials make it difficult to popularize and promote it. With the influence of the international market and the gradual maturity of China's photovoltaic products, crystalline Silicon wafers, solar cells and photovoltaic equipment accessories have been fully develop. China's large-scale and large-scale photovoltaic, wind-solar hybrid and other renewable energy The construction of the source power station has effectively promoted the sustainable development of a wide range of industries.

1.1.3 Wind energy

In industrial manufacturing, Wind energy plays an important role. micro wind turbine, The gradual maturation of nanotechnology energy storage batteries and other related technologies has provided the basis for modern industrial manufacturing. Manufacturing and production provided technical support. Nano-lead-carbon energy storage battery in traditional lead battery On the basis of the pool, nanomaterials and graphene materials are integrated, which can improve the traditional Battery discharge power 2 ~ 8 times, realizing cycle charging. Energy storage cabinet (car) is to track micro-wind turbines and photovoltaic panels through natural wind and solar energy. Store it in a cabinet (cart) under light conversion Technical means in energy storage batteries. The wind-solar hybrid system can be used with the cooperation of wind turbines through photovoltaic panels, Energy storage batteries and other technologies are used for transportation construction.

By analyzing patent statistics, it can be found that my country’s wind engines, Hydraulic engines lack key technologies in their development. Generally speaking, our country is targeting polycrystalline Silicon battery technology, amorphous silicon battery technology, power conversion device technology, etc. and abilities need to be improved, The problem of overcapacity is serious.

1.2 New Energy Machinery Manufacturing Equipment

With the development of new energy technology in construction machinery, some new energy engineering equipment The equipment has achieved industrial development. At this stage, natural gas machinery and electric drive machinery And hybrid machinery is gradually maturing as a typical new energy machinery and equipment.

1.2.1 LNG LNG machinery and equipment

As early as 2009, XCMG launched the world's first LNG loader, which received great social response. Using natural gas as the main power source will not emit pollutants and has good low-carbon and environmentally friendly advantages. natural gas safety High safety, low failure rate, long service life, can reduce 30 % Above Operating costs. However, this type of equipment is limited to applications in gas filling stations and tankers. Therefore, our country's supporting facilities need to be improved.

1.2.2 Electric drive machinery

All-electric hydraulic excavators have far lower operating costs than diesel engines, by Pure electric motors emit no exhaust gas. Among them, Volvo's electric excavator EX 2 The hydraulic structure is also designed as an electrical structure to achieve zero emissions, low noise and and the purpose of high efficiency and energy saving. However, this kind of mechanical equipment has a large power and is not suitable for Battery life requirements are stringent. from now on, As the photovoltaic industry continues to improve, Effective solutions to this problem need to be explored.

1.2.3 Hybrid machinery

Compared with single power machinery, hybrid power mainly optimizes the fluid Pressure aspect. Although it does not have strict requirements for diesel quality, it adapts to Strong ability. Hybrid mechanical equipment is equipped with electric drives for key components The electric motor has higher working efficiency and strong economy.

2 NEW ENERGY MACHINERY MANUFACTURING AND PROCESS BOTTLENECKS AND DEVELOPMENT

2.1 Bottlenecks in New Energy Machinery Manufacturing and Process Development

2.1.1 Insufficient power of new energy machinery technology

In the development of new energy machinery technology, natural gas is a consumable Energy is developing rapidly. In mechanical technology, pure natural compression and liquefaction are mainly used type natural gas. From the perspective of mechanical applications, liquefied natural gas can be used for machinery The operation of the equipment provides sufficient energy and saves a lot of money through various technical means. amount of expenses.

There are still certain deficiencies in the development of electric energy machinery technology. In practice, will be subject to varying degrees of restrictions and impacts, mainly manifested in the lack of mechanical operations. Lack of continuity and insufficient power supply performance. On the whole, foreign electric machinery development Exhibition is relatively fast, The degree of intelligence and automation of electric machinery is relatively high. In the field of machinery manufacturing, my country's use of solar and wind energy to generate electricity has huge development potential.

Machinery that uses natural gas as its main energy source has low operating capabilities during development. Therefore, natural gas energy is very effective in large-scale projects and projects with high power requirements. The result is not good. Overall, new energy machinery technology has strong adaptability in development sex, optimizing the power performance of new energy machinery is the key to future development.

2.1.2 Supporting facilities are not yet complete

The development time of new energy machinery technology is relatively short, and most mechanical equipment has There is a problem of incompatible facilities between new energy technologies, which seriously restricts the sustainable development of new energy mechanical engineering technology.

2.2 New Energy Machinery Manufacturing and Process Development Prospects

2.2.1 development trend

In the development of machinery manufacturing industry, New energy technology has a wide range of applications. Machinery manufacturing enterprises should develop based on The basis of traditional technology is integrated with more new energy technologies, coupled with new energy machinery The manufacturing process is more consistent with China's energy development requirements, so in practice we must vigorously develop new energy machinery manufacturing.

The proportion of new energy in my country's machinery manufacturing industry is increasing, and rational application New energy technology is the key to promoting the transformation and development of the manufacturing industry. With energy shortages As the problem intensifies, my country's industrial structure transformation, environmental protection economic work and other work are also is in full swing, trying to apply various new processes and technical means, some Effectively promote the sustainable development of my country's machinery manufacturing industry.

2.2.2 Main directions for the development of new energy machinery manufacturing technology

First, optimize manufacturing processes and enhance competitiveness. my country's machinery manufacturing The process is developing rapidly and the technical means are gradually maturing. However, compared with the

international leading level, There is still some room for improvement. Therefore, in the future machinery manufacturing, it is necessary to Realize the optimization of mechanical technology itself, and strengthen new technologies on the basis of development Research and develop energy machinery technology, optimize process means, strengthen process investment, and improve Improve manufacturing quality and mechanical quality to achieve the purpose of extending service life, thereby Lay the foundation for the sustainable development of my country's machinery manufacturing industry.

Second, expand new energy development and increase the energy supply market. through new energy source technical means, and strengthen the research and analysis of new energy development technologies, among which the current stage The most widely used technologies are wind, solar and nuclear energy. On the whole, this The development capabilities of these technical means are limited, and there are still many problems in their utilization. In-depth research Studying these issues can provide sufficient energy support for modern machinery manufacturing.

Third, attach importance to the development of new energy machinery manufacturing. Current Environmental Issues Day is becoming more and more serious, strengthen the development and utilization of new energy machinery and equipment, pay attention to mechanical equipment Equipment transformation and strengthening equipment research and development need to be guided by sound policies. Develop new energy and improve utilization efficiency.

3 CONCLUSION

With the support of various modern technical means, new energy machinery and equipment will As it becomes more mature, various process methods will become more perfect, and the structure and performance will continue to be optimized. While realizing the development of industrial majors, it is conducive to protecting the ecological environment, Achieve sustainable development.

COMPETING INTERESTS

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

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