



Research on the Development of New Energy Vehicles and Power Lithium Batteries

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Abstract: With the rapid development of science and technology and the continuous improvement of people's requirements for material life, China's resources have been used in large quantities, so that China is currently facing the problems of resource shortage and environmental protection. Under such circumstances, in order to better meet people's needs, China needs to conduct more in-depth research on new energy, and strive to save energy and protect the environment as much as possible in the development process. In this paper, new energy vehicles and power lithium batteries are taken as the basic arguments, and their composition and advantages are deeply analyzed, The application and development path of lithium batteries in new energy vehicles are also emphatically discussed, and their broad development background is explored, hoping to give some help to relevant researchers.

Key words: New energy vehicles; Power lithium battery; Sustainable development

1. Forward

With the constant emphasis on environmental protection, the strategy of sustainable development has already been written into the Party Constitution. A few years ago, when General Secretary Xi Jinping visited the site, he also put forward the idea that "green mountains and green hills are better than Jinshan Yinshan", and "green mountains and green hills are Jinshan Yinshan", all of which show that environmental protection is one of the key points in China's social development today. In this environment, new energy vehicles have been more fully developed and widely used. As the main power source of new energy vehicles, the development and research of power lithium battery has also been paid attention by experts at home and abroad. We firmly believe that Li-ion battery is the key factor for the development of new energy vehicles in the future, because only the performance of this kind of battery can guarantee the characteristics of energy saving and environmental protection. Coupled with the characteristics of lithium-ion batteries, lithium-ion materials must have a huge development space in the development of new energy in China.

2. Basic composition of lithium-ion power battery and its advantages in use

2.1 Basic composition of power lithium battery

In the research of new energy vehicles, we should understand that it is very necessary to study its power, because this is the key of vehicles. As the power source of new energy vehicles, power lithium batteries have extremely important research significance in the development and application of new energy vehicles. In fact, its use greatly reduces the cost of power facilities. Moreover, to some extent, lithium-ion batteries promote the development of new energy automobile industry. There are many basic components of Li-ion power battery, including some plastic composite films, converters, conductors, positive and negative electrodes and conductive electrolytes. Among these materials, the most important ones are positive electrode material, negative electrode material and electrolyte between

materials. Of course, the separator is also very important, and it is with these contents that it basically constitutes the core of lithium batteries. The principle of power battery is that lithium ions are continuously released from its positive electrode material, and these lithium ions enter the negative electrode under the impetus of electrolyte, thus forming a closed circuit to provide electric energy to the outside. It is worth mentioning that the charging process and discharging process are just the opposite, that is to say, when discharging, lithium ions will run to the positive electrode, but we must also control its charging efficiency, and ensure that the storage and subsequent use of electric energy are always in a good state.^[1]

2.2 Application advantages of power lithium battery

Compared with ordinary batteries, lithium batteries have many advantages. The most obvious advantage is that the discharge time of lithium ion battery is relatively long, in other words, its capacity is relatively high. This will essentially improve the durability of new energy vehicles, and this performance can also make new energy vehicles stand out among many vehicles. At present, lithium ion batteries have been widely used in new energy vehicles. In application, it also shows its unique advantages, and has become a leader in many automotive fields. Specifically, the advantages of lithium-ion batteries can mainly focus on the following aspects.

First of all, as an energy storage unit, lithium-ion batteries store more energy than ordinary batteries, for example, they store dozens of times as much energy as batteries we use everyday. In addition, its manufacturing process is relatively simple. As we all know, other primary battery systems consume a lot of water. However, lithium-ion batteries are different from them, because they almost do not consume water resources in the manufacturing process. From this point of view, lithium ion batteries can also save water. This is of great practical significance for our country to save water resources. Moreover, its application is relatively green and healthy, that is to say, it will not produce some harmful substances at work or when it is scrapped. As we all know, if a normal battery is scrapped, it will take a long time for the soil to completely dissolve the toxic substances in it, so that it will not harm the environment. However, the power lithium battery will not produce any harmful elements, which is also of great significance for protecting the environment. In addition, lithium-ion batteries have relatively low requirements for the outside world, and the most concrete manifestation is that they can work efficiently at various temperatures. However, if the ordinary primary battery is under the condition of high temperature or low temperature, it may produce some unusual conditions. Finally, the lithium ion battery is lighter, which makes it easier to carry and replace, and its own power generation efficiency and charging efficiency are relatively high. This gives her a longer service life compared with the traditional battery. The service life of new energy vehicles also indirectly determines the service life of new energy vehicles, so the in-depth study of lithium ion batteries is of great significance for the development of new energy vehicles.^[2]

3. Specific application of power lithium battery in the development of new energy vehicles

In recent years, with the continuous implementation of the concept of environmental protection, new energy vehicles in various countries have also achieved a better development environment, and a considerable number of enterprises are spending a lot of costs to conduct research related to the allocation of new energy vehicles. Some countries have also introduced a large number of policies conducive to the development of new energy vehicles to provide a good social environment for the development of new energy vehicles. With the support of the government and enterprises, the new energy automobile industry has also developed more rapidly. Among them, Li-ion battery, as the power generation system of new energy vehicles, is the most valued by researchers of new energy vehicles. In fact, only by solving the problem of lithium-ion batteries can new energy vehicles get a longer-term development.

3.1 power lithium battery is one of the key factors in the development of new energy vehicles

Nowadays, every country in the world has encountered a serious problem in the process of development, that

is, environmental protection. In the last century, people didn't realize the environmental problems and destroyed the environment in the process of development, so that they had to spend a lot of manpower and money to repair the environmental problems. Nowadays, we all know that this is a wrong way, so now we must strictly put an end to the wrong road of development before governance, and take the strategy of sustainable development, so as to achieve a longer-term development.

Due to many environmental problems, countries all over the world are adopting different policies to protect the environment and save energy. As one of the most important means of transportation in modern times, the function and importance of automobile is self-evident. However, it is undeniable that it consumes a lot of oil resources and produces a lot of toxic tail gas to destroy our environment. Under such circumstances, we need to seek a pollution-free and green material to replace the current power system. Under various demands, Li-ion battery stands out, It has consolidated its position in the engine industry with its unique safety, lower cost and higher performance. But it must be said that there are some problems in its development, which are mainly reflected in the battery technology and battery materials. In other words, how should we make a perfect fit between lithium-ion power generation technology and automobile power generation system? What kind of materials should be used to minimize the mobility of the car and let it continue to fly at high speed? All these problems need us to solve, Therefore, we can predict that the future development direction of new energy vehicles should be the overall coordination of locomotives and whether the vehicles can reach a high speed. At the present stage, we should also conduct in-depth research along this direction. ^[3]

3.2 application of lithium-ion batteries in other fields of new energy vehicles

As for the application of lithium ion battery in new energy vehicles, we should realize that it is not only applied in power generation, but also has a good application in mobile communication and electricity in new energy vehicles. Electricity is indispensable in our life, It exists in all aspects of life, and even in cars, we can't live without it. The positioning of a car is a means of transportation, so it is absolutely impossible for it to stay in one place for a long time, How to keep the power stable during the movement and let us use the power in the car has become the focus of various researchers.

In fact, this problem was solved at the moment when the battery was invented, The invention of the battery stabilized electricity and turned it into a portable substance. However, at this stage, the researchers mainly study how to ensure that the battery power will not lose a lot and how to store more power- because this is the most worrying aspect for users. These are the advantages and characteristics of lithium batteries in practical application, so it is not difficult for us to know that lithium batteries will have an important application in new energy automobile appliances in the future. For example, it can be used as the main circuit of a new energy vehicle to output electricity from various places in the vehicle. In fact, in the planning of new energy vehicles released this year, China also explicitly stipulates the important position of new energy in the development of emerging automobile industry, which provides a great opportunity for the development of new energy vehicles, and of course it is also one of the important opportunities for the development of battery industry. In this regard, both must grasp the trend of the times, so as to make the new energy vehicles develop in a longer term.

4. Development prospect of new energy vehicles and lithium ion batteries

At present, the state attaches great importance to the development of new energy vehicles and new power batteries, and actively encourages enterprises studying these contents to carry out in-depth cooperation and friendship, in order to provide a more favorable plan and create a better environment for the development of new energy vehicles. As one of the most important systems in the development of new energy vehicles, the importance of power system is self-evident, because its quality will fundamentally determine the quality of new energy vehicles. And because there is a very high requirement for environmental protection, its power system should also conform to the concept of low carbon and environmental protection, which is actually the core of new energy vehicles. In view of this, we need to

have a more comprehensive and in-depth study on lithium batteries, so that it will not affect the characteristics of new energy vehicles in specific application, so that it will not affect the comprehensive level of new energy vehicles. In fact, we have a good expectation for the application combination of new energy vehicles and lithium-ion batteries, and its research and development and application have now entered a relatively important stage, and I believe it can be fully put into practice soon.

Before 2015, the world began to produce lithium ion batteries on a large scale. At the beginning of the 21st century, the number of lithium-ion batteries in the world has reached hundreds of millions, and its commercial scale has reached an unprecedented number. Through the data analysis in recent years, we find that the industrial chain of lithium batteries is constantly increasing, the industrial scale is also constantly increasing, and the funds involved are tens of billions of yuan. What is gratifying is that the application of lithium-ion batteries has also been favored by various industries and fields. What's more, big data shows that China's lithium-ion battery industry reached several hundred million yuan a few years ago. As we all know, today's social environment is further deteriorating, and energy is gradually becoming tense. Under the condition of a certain amount of energy, how to rationally use energy to make society develop for a longer time is a huge problem facing the scientific community today. It is precisely because of this that the industrial development of new energy vehicles has attracted the attention of all parties. Moreover, the scale of the industrial structure of lithium ion battery is relatively large now, and its development opportunity is unprecedented under this big environment. As far as the current environment is concerned, lithium ion batteries will be one of the main power batteries for new energy vehicles. That is to say, once the new energy vehicle is to be researched, its power system is likely to be a lithium ion battery. Because lithium-ion batteries can really reduce the exhaust emissions and realize energy saving and emission reduction in use, new energy vehicles are bound to get better development along with lithium-ion batteries. At the same time, lithium-ion batteries can also help the development of new energy vehicles in China, I believe that the two will go hand in hand, which will definitely add a lot of color to the future transportation industry.

5. Summary

Nowadays, energy is extremely scarce, but we understand that development cannot be stopped. Due to the improper development in the last few centuries, the ecological environment is also deteriorating. Under this circumstance, the protection of resources and environment is gradually put on the development agenda. As one of the most important tools in the slogan of energy saving and emission reduction, new energy vehicles bear a lot of people's expectations. Based on this, we have reason to believe that the application of lithium-ion batteries in new energy vehicles is inevitable. Therefore, we should make a more in-depth study on the combined development of new energy vehicles and lithium batteries to ensure that they can show a higher quality in the subsequent use process. Only in this way can we better implement and implement the strategy of sustainable development, and at the same time, we can have green mountains and green mountains. I believe that in the near future, lithium-ion batteries will have a more comprehensive application in new energy vehicles, thus contributing to the development of new energy vehicle industry.

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