

EXPLORING THE IMPORTANT ROLE OF PHYSICS IN THE DEVELOPMENT OF THE AUTOMOBILE INDUSTRY

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Abstract: The operation of everything in the world has inherent laws and connections, and the development of physics stems from people's practice and exploration of life. Currently, physics The application of academic knowledge has played a role in promoting the development of the automobile industry. This article reviews current knowledge of physics for creative design and modification of automobiles. A brief overview of the important roles of physics and manufacturing is given, aiming to promote the further integration of physics and the development of the automotive industry.

Keywords: Physics; Automobile industry; Important role; Development

1. INTRODUCTION

Physics is a very basic subject that is closely related to life. Related natural subjects, the so-called "nature", its main manifestations On the one hand, the development of physics benefits from people's daily life practice in. On the other hand, physics serves people life practice. Physics is relevant to everything in people's lives A summary of the laws of how things operate, studying the principles of how things change. wait. For example, the Wright brothers, the inventors of the airplane, were based on birds. The flight principles and other principles were developed into aircraft, thus allowing mankind to step into the The age of flight. Based on the thermal power conversion principle in physics, The invention of the internal combustion engine replaced the horse and fueled the modern automobile industry development of. Therefore, physics plays an important role in human social civilization. Progress is a vital enabler. Likewise, physics The development of science and technology has continuously promoted the automobile industry towards safety, Develop well and quickly in the direction of efficiency and convenience.

2. THE IMPORTANCE OF PHYSICS TO THE DEVELOPMENT OF THE AUTOMOBILE INDUSTRY EFFECT

Since China's reform and opening up, with the rapid development of China's economy and society and the significant improvement of people's living standards. The development of the automobile industry has also ushered in spring. All kinds of cars have sprung up on roads with developed traffic. They have not only made breakthroughs in "quantity", but also It has reached a whole new level in terms of "quality". These are all due to the widespread application of physics in the automotive industry.

2.1 The Role of Mechanical Knowledge in the Development of the Automobile Industry

Forces occur when objects interact with each other Mechanics knowledge is everywhere in life. Similarly , the development of the automobile industry is also inseparable from the knowledge of mechanics. The study of knowledge.

2.1.1 Friction

Friction is a common mechanical knowledge point, and most People think that the ability of a car to run depends solely on the engine, but in fact This understanding is one-sided. If there is no contact with the ground, Even if the engine is started, it will only cause the tires to spin. Therefore, the friction between the ground and the tires is what makes the car "run" The real internal reason for "getting up". Therefore, automotive technicians When designing car tires, engineers will increase the quality and roughness of the tires. roughness to increase the friction between the tire and the road surface, which can To avoid tire spinning on slippery roads in rainy days^[1].

2.1.2 Inertia

The so-called inertia means that an object suddenly loses its force when it is in motion. A type that retains its original state of motion despite changes in life Attributes. Next, this article uses examples and phenomena in life to Explain this concept. for example, When we were standing on the bus, If the bus driver suddenly brakes, you will find that your body Falling forward is a concrete manifestation of inertia in life, although Even though the car has stopped, your body still maintains its own movement. In the dynamic state, the phenomenon of leaning forward appears. Therefore, Ann The design of full belts and airbags helps reduce inertia injuries harm to a minimum.

2.2 Applications of Electromagnetism in the Automotive Industry

This article mainly introduces the magnetic effect of current and electric current in electromagnetism. The phenomenon of magnetic induction plays a role in promoting the development of the automobile industry.

2.2.1 Current magnetic effect

The magnetic effect of current is the existence of magnetism around a current-carrying wire. Field, electromagnetic relay is developed based on this principle and can be used to prompt changes in the oil in the vehicle oil pump. In the past, people would insert a thin wire into the oil pump to check the oil usage. The application of electromagnetic relays in this area shows efficient and accurate characteristics, allowing people to conveniently and quickly check oil usage.

2.2.2 Electromagnetic induction

the phenomenon that a conductor can generate electric current by cutting magnetic induction lines in a magnetic field. Using this principle, an alternator can be developed. Nowadays, cars generally use alternators to replace the previous DC generators. This ensures that the car's power needs are met during operation. In addition, the wheel sensors in the anti-lock braking system of the car are also developed based on the principle of electromagnetic induction, which can quickly provide pulse signals to ABS control system, thereby greatly improving the braking performance of the car [2].

2.3 Other Physics Knowledge in the Development of the Automobile Industry the Driving Role

At present, cars are no longer just traditional concepts. It is a transportation tool and is synonymous with high-tech products. The optics, thermal and electrical knowledge in science are used in automobiles. It plays an important role in design and renovation, and is the driving force behind your leading source of creative automotive design and modifications.

2.3.1 Application of optical knowledge

Objects produce images through the reflection of light, and only with images can they be seen. Therefore, the rearview mirrors of cars are all convex mirrors. On the one hand, they can reflect the images of objects behind them for observation. The situation behind the car. On the other hand, because it is a convex mirror, it is plane mirrors have a wider viewing range. In addition, car headlights. The light emitted to the outside reflects the road conditions at night to people's eyes, thus ensuring the safety of driving at night.

2.3.2 Application of thermal knowledge

The water tank on the car is to avoid engine temperature. It is designed to be damaged due to excessive height. In addition, in order to avoid the inside of the water tank. The water expands due to thermal expansion and contraction, causing damage to the water tank. Most of them are now add a certain amount of antifreeze to the water tank, therefore, you can. Instead of draining the tank of cold water at night, just drain it regularly. Just add water to the water tank.

2.3.3 Electrical knowledge

The friction between the car and the air when driving at high speed. Electricity will be produced, and when the charge accumulates to a certain extent, it will produce sparks, which can cause damage to some cars containing flammable materials. It brings safety risks. Cars equipped with acetylene tanks or gasoline tanks are likely to be damaged during long-distance transportation. Burns and explosions may occur due to static electricity. Therefore, here in the design of some cars, an iron chain can be designed at the rear to send the charge into the earth to avoid accidents.

3 CONCLUSION

In recent years, the development of my country's automobile industry has exploded. With rapid growth, cars are not just a means of transportation, but have become a kind of combination of intelligence and high technology that is necessary in people's lives. This requires technicians to continuously integrate physics into the development of the automobile industry and promote the development of the automobile industry. Developing in the direction of efficiency, convenience, safety and intelligence, make important contributions to the improvement of people's quality of life and economic development.

COMPETING INTERESTS

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

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