

## СЕКЦІЯ

ДОСЯГНЕННЯ, ПЕРСПЕКТИВИ ТА ПРОБЛЕМИ ДОРОЖНЬОГО  
БУДІВНИЦТВА, МАШИНОБУДУВАННЯ ТА АВТОМОБІЛЕБУДУВАННЯ.  
ЗАХИСТ НАВКОЛИШНЬОГО СЕРЕДОВИЩА ТА РОЗВИТОК СУЧАСНИХ  
ЗЕЛЕНИХ ТЕХНОЛОГІЙ.

### **WHAT WILL THE CARS OF THE FUTURE LOOK LIKE?**

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No matter how much a person is interested in all trends in the development of modern technologies, it is still very difficult to imagine the car of the future. The only thing that can be assumed is the development of machines in the direction of environmental friendliness, autonomy, and artificial intelligence. Most likely, in the future, cars will take over most aspects of driving, and the requirements for human driving skills will be reduced to a minimum. But still, let's try to imagine in what direction the machines will develop.

#### *Efficiency and eco-friendliness*

Today's development of power units already strives to minimize the consumption of petroleum products in the operation of vehicles. In addition, electric or hybrid vehicles are becoming more and more popular. Therefore, it can be assumed that soon cars equipped with internal combustion engines will become a lot of collectors and lovers of “old times”. And Fuel Cell Electric Vehicles (FCEVs) will become an everyday reality.

#### *What opportunities do these technologies open?*

Firstly, the use of electric energy will save the costs of operating cars and completely rid the atmosphere of harmful emissions of exhaust gases. But the increased need for electricity will most likely increase its cost. In addition, due to the glut of cars in large cities, it can be assumed that the main trend will come to ultra-compact cars, which will be able to successfully compete with the usual standard car sizes in megacities.

Of course, such a tendency will reduce the scientists' concerns about the pollution of the environment by numerous cars. But another question arises — how to increase eco-friendliness and reduce the cost of obtaining electrical energy, as well as make the production of hydrogen fuel cheaper.

#### *Transport and traffic safety issues*

The main idea of traffic safety in the future is its full automation through autonomous control and coordination of the traffic flow through the central server of the metropolis. Having removed the human factor of error from the main risks, scientists suggest a reduction of road accidents by up to 95%. In addition, due to the full introduction of automatic piloting, the internal design of the car will also change significantly, as it will lose the need for a driver in human form. But, this will not happen soon, since the first automated versions require constant human control, and the classic driver's seat with a steering wheel and foot pedals will remain for a long time.

Moreover, new technologies may appear in the production of materials for the car body or other principles of designing a rigid frame, which will ensure full safety of the driver and passengers inside the cabin. According to some scientists, cars of the future will be equipped with special systems to keep people alive even in the most difficult conditions, and automated first-aid kits that can save lives until the arrival of rescue teams.

#### *Car dimensions*

As already mentioned above, the constant increase of automobile transport in cities dictates the need to create and buy more compact models of cars. By combining a small car with a centralized traffic management system, it will be possible to achieve a multiple increase in the capacity of modern streets while maintaining traffic safety at the highest level. Also, more compact dimensions will allow you to create spacious parking lots and completely forget about hours-long traffic jams.

Based on modern developments, we can assume the emergence of mass use of airless tires, which will use the principle of rubber spokes that redistribute the load. For example, the Bridgestone company has been testing wheels built on this principle for several years. But now these tires are used only on golf carts, and testing for civilian

and commercial vehicles continues. Such technology will significantly increase traffic safety by eliminating tire breaks or punctures.

### *Modern cars*

Numerous companies in the automotive industry are already developing and testing various configurations of cars with automated control based on the readings of video cameras and radars. But two companies have gone the furthest in their developments. The first one is Google Company, which is focused not on the production of cars but on the development of automatic piloting technologies. And the most advanced company in the field of car development is Tesla Motor, which has successfully launched many high-quality electric cars equipped with the most advanced autopilot system for civilian vehicles. But other companies are also trying to keep up with them, although they are at the stage of developing and testing their systems, which gives hope for a transformation of driving principles and changing the entire traffic in the nearest future.

### References

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## **PROBLEMS AND TECHNOLOGIES OF AUTOMOTIVE INDUSTRY**

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The automotive industry is one of the most important sectors of the economy of Ukraine. It plays a significant role in the development of the country's economy,