

Non-Blinding Headlights

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Russian scientists from Dimitrovgrad (Ul'yanovsk area) have designed a new non-blinding headlight system. Its use in cars will significantly decrease the risk of driving at night, because the oncoming light will be duller, while the road in front will be lightened brighter. First studies were conducted at the expense of the scientists. Now, with the support of FASIE, the innovation is adapted to industrial making and will probably be launched into the mass production.

A need for an anti-blinding system is obvious to everyone that drove at night and was blinded for a moment by the headlight of an oncoming car. Only very few drivers use, in accordance with the rules, the existing switch from distant to close light in order not to blind ones who drive in oncoming cars. Of course, there are smart systems of night vision based on infrared radiation, but they are too expensive for common cars.

Solution found by the Russian specialists seems paradoxical at first ? darkening the windscreen! However, such darkening certainly won't be permanent, but pulsing.

The new system consists of the following components: gas-discharge light (xenon lamp); electronic block switching the light on and off; windscreen with an optical cover, LC-locks and changeable transparency; and the electronic chip that controls the whole system. It works as follows. The switch block sends an electric impulse to headlights generating a flash that lightens the road, while the optical cover is "open" and the windscreen is transparent. In a fraction of a second, the headlights are off and optical screen is "closed", which

darkens the windscreen by more than 50 times.

A high frequency of flashing allows the human eye to perceive a continuous light (like in a film, where quickly changing images give us an illusion of movement), so a driver can see the road very well. A part-time darkening of the windscreen protects the driver's eyes from the blinding light of an oncoming car.

For avoiding coincidence of flashing rhythms in cars coming from opposite directions, the inventors installed a special program for random frequency of flashing (the average frequency still allowing an illusion of continuous light). Thus, it is very improbable that your headlight flashes into an open screen in the oncoming car.

It should also be mentioned that xenon lamps are three times as powerful as usual halogen lamps and have a light spectrum close to that of daylight. Therefore, with the use of xenon lamps drivers can better see the road and sidewalks.

Soon this amazing system will appear in shops. One of the inventors, Alexander Polovinkin, explains: "Principal technical problems have already been solved, and all necessary details are available. Now we need to optimize the system and improve its operation parameters and design. Our first demonstration sample works well. Probably in two or three years we can produce the first factory-made set of our anti-blinding system".

Source: Inormnauka

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