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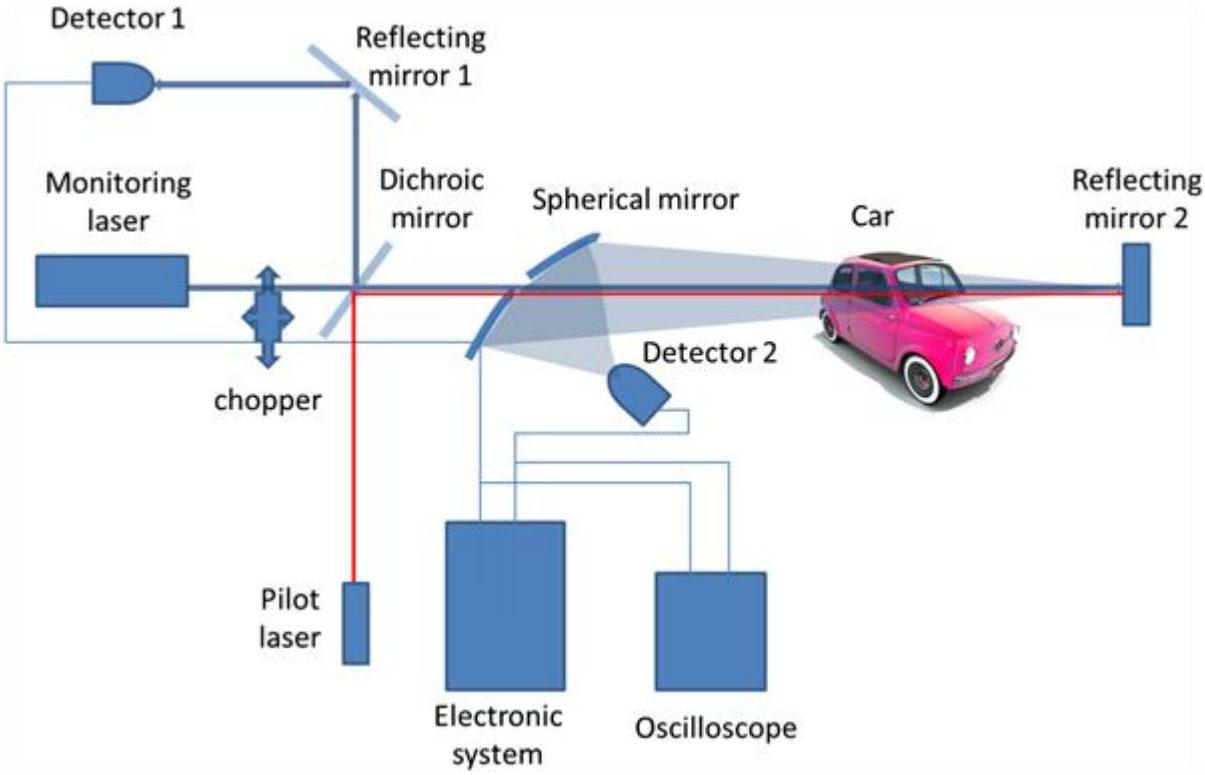
Laser Device Detects Alcohol in Cars

WARSAW, Poland, June 3, 2014 — Forget the Breathalyzer. Police might soon be able to detect alcohol on your breath before they even pull you over.

A new laser device developed at the Polish Military University of Technology's Institute of Optoelectronics has been shown to detect the presence of alcohol vapors inside a moving car.

"These researchers have demonstrated how a laser device could be effectively used for detecting drunken drivers and thereby helping to reduce the number of accidents caused by drivers under the influence of alcohol," said Marco Gianinetto, a professor and researcher at Polytechnic University of Milan. He is an associate editor and reviewer with the *Journal of Applied Remote Sensing*, in which the research is published (doi: 10.1117/1.JRS.8.083627).



Experimental setup for detection of alcohol in cars. Courtesy of the Journal of Applied Remote Sensing.

The laser must be set up on the side of the road to allow it to monitor passing vehicles. The device employs a stand-off detection method, a chemical and biological compound identification system.

In the study, the researchers simulated alcohol vapor coming from a human lung by evaporating a water solution of alcohol with a specific concentration and temperature. The results showed that the presence of such vapors was detected at concentrations of 0.1 percent and greater.

A configuration of the experimental setup,with the reflecting mirror placed on the other side of the car to redirect the laser beam.

If alcohol vapors are detected in the vehicle, a message — including a photo of the vehicle and its license plate — can be sent to a police officer waiting farther down the road. Conventional tests to determine the presence of alcohol may be conducted after the officer stops the vehicle.

The device could also identify vehicles in which the driver is sober but the passengers are not, or if there is alcohol spilled in the car, according to the researchers. They noted that the device "will surely decrease the number of cars that have to be checked by police and, at the same time, will increase efficacy of stopping drunken drivers."

The researchers are now studying possible development of a similar laser technology that could detect drugs and other intoxicants.

For more information, visit www.wat.edu.pl.