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Video road test: Benelli BN302 delivers the Italian experience at a budget price



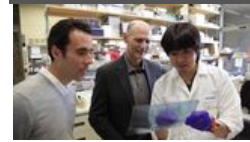
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New tech spares oncoming drivers' eyes from your high beam headlights

By [Ben Coxworth](#)
September 10, 2014

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The system prototype, mounted on the hood of a truck

A couple of years ago we heard about an [experimental headlight system](#) being developed at Carnegie Mellon University, that allows drivers to see through rain and snow more easily. It does so by selectively *not* illuminating individual raindrops and snowflakes. Now, thanks to recent road tests on the streets of Pittsburgh, its creators have confirmed that it can also be used to keep oncoming drivers from being blinded by your high beams.

Instead of a single bulb or cluster of LEDs, the system uses a DLP (digital light processing) projector. This splits the emitted light into one million separate beams, each one of which can be controlled via an onboard microprocessor.

In the previous research, a camera adjacent to the projector monitored its

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field of illumination, and detected any falling water droplets as soon as they entered the top of that field. The microprocessor then used algorithms to calculate the drop's trajectory, and proceeded to deactivate the projector's light rays along that path – keep in mind, each ray was off for only a matter of milliseconds. The result was that the drop was able to fall through the field of illumination, but with no light rays actually striking it.

In the new research, the camera was also able to detect multiple oncoming vehicles at normal highway speeds, and then dim or disable the beams which would be shining right into their drivers' eyes. The system is also now much faster, so it can respond directly to the camera's real-time output instead of having to use the predictive algorithms. The time lag between vehicle detection and light-dimming is between just 1 and 2.5 milliseconds.

Additionally, the technology is now able to identify items such as road signs or lane markings and *increase* the intensity of beams illuminating those, in order to help the driver see them more easily. In any case, regardless of what it's doing, the changes in its overall illumination of the road are reportedly minor and "generally not noticeable by the driver."

Although the current prototype is relatively large and bulky, the Carnegie Mellon team plan on miniaturizing the technology to the point that it could be incorporated into a regular-sized headlight.

Source: [Carnegie Mellon University](#)

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About the Author

An experienced freelance writer, videographer and television producer, Ben's interest in all forms of innovation is particularly fanatical when it comes to human-powered transportation, film-making gear, environmentally-friendly technologies and anything that's designed to go underwater. He lives in Edmonton, Alberta, where he spends a lot of time going over the handlebars of his mountain bike, hanging out in off-leash parks, and wishing the Pacific Ocean wasn't so far away. [All articles by Ben Coxworth](#)



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Not trying to be selfish but why focus making this product not blind other drivers? I mean the product is supposed to work for YOU the person that has it not for others.

Daniel Bruce

2nd May, 2015 @ 5:26 a.m. (California Time)

@ Daniel Bruce Not blinding the other driver might keep him from not seeing the road hazard that would have dragged him into a head on collision with you and it allows you to use your high beams despite oncoming traffic which improves your vision.

Slowburn

2nd May, 2015 @ 5:26 a.m. (California Time)

I'm up for anything that helps with oncoming headlight issues, that's a major safety issue that's not getting addressed by DOT or the police. Then there kids nowadays and there crazy bright headlight are not being regulated, and or the plastic headlights that sun fade, this is just dangerous.

Jay Finke

2nd May, 2015 @ 5:26 a.m. (California Time)

This sounds wonderful and I hope they can produce a reasonable product in the next 5-10 years. As I get older (only 43 now), my night vision is getting more and more flaky and there's nothing worse than night AND rain. By the time I hit 50, I'd love to have something like this in my car - and as discussed above, I'd also love to have this in the oncoming cars so that my system works better too!

David Storfer

2nd May, 2015 @ 5:26 a.m. (California Time)

This is one of the most exciting new technologies I've seen in years. I can't wait to see this tech implemented into our new cars, or retro fitted. I've been praying for something like this forever :-)

Terry Penrose

2nd May, 2015 @ 5:26 a.m. (California Time)

@David Storfer Acuity, color vision, and focus all deteriorate with age. Night vision is one of the few things that do not. Your problem might be due to vitamin A deficiency, not aging.

Frederick

2nd May, 2015 @ 5:26 a.m. (California Time)

Hope this tech becomes mandatory & that includes older vehicles. As

you know, cannabis smokers are blinded by bright lights much more so than non smokers. And it's bad enough for non smokers. Their seems to currently be no standard on how bright the lights can be. With so much decrimilnazation & legalization transpiring it is something that should be considered.

noteugene

2nd May, 2015 @ 5:26 a.m. (California Time)

Great idea, but in northeastern Colorado very few people (especially drivers of 4x4 pickup trucks) have any idea for how to dim their headlights. Some of them are so bright that they can actually cause physical pain. Never mind the risk of a head-on collision. I believe that most of these people are the same (immature) ones who install loud exhaust systems just to "show off".

BBJohn

2nd May, 2015 @ 5:26 a.m. (California Time)

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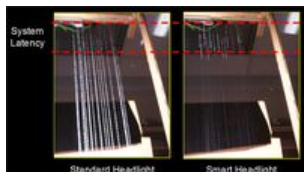
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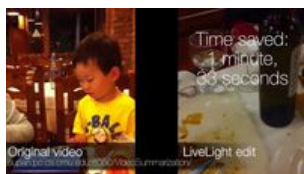
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