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# These 'Smart Headlights' Aim To Make Nighttime Driving Way Safer—Even In Rain & Snow

The Huffington Post | By [David Freeman \(/david-freeman/\)](#)<https://twitter.com/davyfreeman>

Posted: 09/11/2014 8:42 am EDT | Updated: 09/11/2014 8:59 am EDT



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Talk about a bright idea!

<https://www.facebook.com/sharer/sharer.php?u=http%3A%2F%2Fwww.huffingtonpost.com%2F2014%2F09%2Fsmart-headlights-nighttime-glare-headlights-illumination-n-5801490.html> that provide bright illumination of the road ahead without blinding the motorists in oncoming vehicles.

<http://www.fox.com/next/Fix-May-Be-Here-For-Nighttime-Driving-Danger-3A%2F%2Fhuff.to%2F1CVCY0A>

[www.cmu.edu/news/stories/archives/2014/september/september09\\_smartheadlights.html](http://www.cmu.edu/news/stories/archives/2014/september/september09_smartheadlights.html)

in the vicinity and then instantaneously dimming only the specific rays of light that otherwise would make it into the motorists' eyes, according to a written statement released by the university.

"With our programmable system...we can actually make headlights that are even brighter than today's without causing distractions for other drivers on the road," [Dr. Srinivasa Narasimhan \(http://www.ri.cmu.edu/person.html?person\\_id=1371\)](http://www.ri.cmu.edu/person.html?person_id=1371), associate professor of robotics at the university and a member of the team who developed the smart headlights, said in the statement.

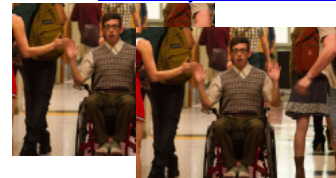
If the lights work as well in the real world as their developers expect them to, they could save *lots* of lives. Although there is 60 less traffic at night, more than 40 percent of all fatal car accidents happen then ([http://www.noys.org/nighttime\\_driving\\_restrictions\\_statistics1.aspx](http://www.noys.org/nighttime_driving_restrictions_statistics1.aspx)), according to the National Association for Youth Safety.

And the headlights are designed to do more than reduce headlight glare. They can block the rays of light that reflect off snowflakes and raindrops to enhance a motorist's vision when driving at moderate speed at night in snow or rain. They can also boost light output as needed to fully illuminate road signs and potential obstacles.

"We can do all this and more with the same headlight," Narasimhan said in the statement.

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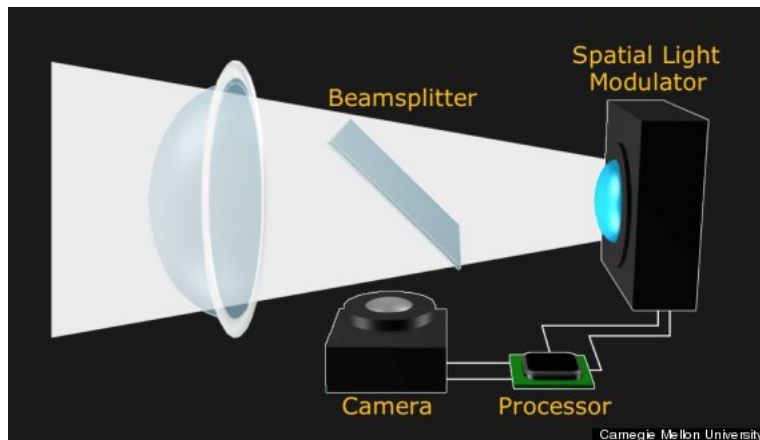
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How do the headlights work? Instead of the standard lights or LED clusters used in conventional automobile headlights, the smart headlights use a technology known as digital light processing, or DLP--the same technology used in some TVs.

The technology can divide beams into a million tiny beams, each of which can be independently controlled by an onboard computer in response to signals from a camera that tracks precipitation, signs, obstacles, and oncoming vehicles.



The components that make up the smart headlights.

Everything happens in a matter of milliseconds, according to the statement, and the ever-changing illumination is barely noticeable to the person behind the wheel.

The headlights are an improved version of [similar lights demonstrated by the Carnegie Mellon team](http://www.technologyreview.com/news/428353/smart-headlights-see-through-rain-and-snow/) (<http://www.technologyreview.com/news/428353/smart-headlights-see-through-rain-and-snow/>) in 2012 and described then in a Technology Review article.


"The current system is about 10 times faster than our old one in 2012, can do many more tasks (anti-glare, object highlighting, road visibility and bad weather visibility improvement), and has been demonstrated for the first time on a vehicle moving at high speeds in regular traffic," Narasimhan told The Huffington Post in an email. "[The] previous system was a proof-of-concept demonstrated in the lab."

The road-testing was done with a prototype light mounted atop a pickup truck (see above). Plans call for a smaller version of the headlights to be mounted in the headlight slot of a truck next year.

When might the headlights show up in new cars? Narasimhan said his best guess was in three to five years.

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 (<http://www.cnet.com/news/smart-high-beam-headlights-wont-blind-oncoming-drivers/>) [Smart high-beam headlights won't blind oncoming drivers - CNET](#) (<http://www.cnet.com/news/smart-high-beam-headlights-wont-blind-oncoming-drivers/>)

 (<http://www.sciencedaily.com/releases/2014/09/140909113342.htm>) [Smart headlights spare the eyes of oncoming drivers -- ScienceDaily](#)  
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 (<http://www.engineering.com/Videos/Thisweekinengineering/Videoid/2982/TWIE-111-Smart-Headlights-Make-Raindrops-Disappear.aspx>) [TWIE 111: Smart Headlights Make Raindrops Disappear - This Week in Engineering](#) ...

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## Conversations

**Lee Phillippi** · Top Commenter

Headlights and windshields should be polarized at a 45 degree angle. Lights of on coming vehicles would be polarized in the opposite direction which would reduce the blinding glare.

[Reply](#) · [Like](#) · [7](#) · [Follow Post](#) · September 11, 2014 at 11:20am
**Jubal Wright** · Top Commenter

while cool its something more to break and cost an arm and a leg to fix when it does

[Reply](#) · [Like](#) · [2](#) · [Follow Post](#) · September 11, 2014 at 3:54pm

**Jim Melton** · Top Commenter · Hiker, Backpacker, Sailor, Caver, Dog Trainer, and general pain in the ass at Sheltie Rescue of Utah

This technology is very promising and I look forward to experiencing it under real-life conditions. However, the article pulls a slick on when it says "Although there is 60 [percent] less traffic at night, more than 40 percent of all fatal car accidents happen then." If there's 60% less traffic, then night-time traffic is 40% of day-time traffic, so naturally there's only 40% as many fatal accidents. How much "more than 40%" is the night-time rate? If it was dramatically more (e.g., 60%), wouldn't the article have used that larger number?

[Reply](#) · [Like](#) · [1](#) · [Follow Post](#) · September 12, 2014 at 12:10pm
**Kevin Begley** · Top Commenter · UC Davis

Better late than never...  
Cars will be driving themselves, soon; lights (particularly blinding lights) will fade.

[Reply](#) · [Like](#) · [1](#) · [Follow Post](#) · Edited · September 12, 2014 at 6:12am

**Ed Floden** · Top Commenter · Website maintenance and design at Techren Enterprises

Those smart headlights better be bright, to compensate for the loss of view from that giant box on your hood!

[Reply](#) · [Like](#) · [1](#) · [Follow Post](#) · September 12, 2014 at 7:35am
**Fe Ciega** · Top Commenter

Anything to get rid of those annoying blue headlights kids use.

[Reply](#) · [Like](#) · [1](#) · [Follow Post](#) · September 12, 2014 at 10:19am
**Ralph Reinhold** · Top Commenter · Necedah High

And does this work for SUV to compact car? They need to put the headlights lower and permanently adjust them so they don't shine in the pedestrians' and bicyclists' eyes. Other than the rare instance of transitioning from the flat to up hill, shining the headlights above their centerline does nothing.

[Reply](#) · [Like](#) · [Follow Post](#) · September 12, 2014 at 11:07am
**Mighk Wilson** · Top Commenter · Smart Growth Planner at Metroplan Orlando

Making it easier to drive too fast at night. Pedestrians, bicyclists and animals can just put up with the blindingly bright beams.

[Reply](#) · [Like](#) · [Follow Post](#) · September 12, 2014 at 2:39pm
**Bill Pappas** · Top Commenter

Or, we could make all roads one-way. Don't worry, with each new advancement in safety, motorists will always 'out dumb' the technology.

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**Chuck Ferrell** · Top Commenter · Rock Hill, South Carolina

I'd be happy if we would just outlaw plastic lenses that yellow over time. Worst loosening of regulations ever.

[Reply](#) · [Like](#) · [Follow Post](#) · September 12, 2014 at 8:19am
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