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Breakthrough Makes LED Lights More Versatile

LED manufacturing technique creates smaller, thinner inorganic LED displays.

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By Andrea Thompson, LiveScience



LEDs have started to blink on all over the place in recent years, from car taillights to roadside billboards. But design and manufacturing drawbacks have limited the ways in which the energy-efficient lights can be used.

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A new study, detailed in the Aug. 21 issue of the journal *Science*, tackles these limitations by combining the best of two worlds of LEDs, to make ultrathin, ultrasmall and flexible light-emitting diodes that may one day be used to create everything from laptop screens to biomedical imaging devices.

LEDs come in two types: organic and inorganic. Organic LEDs aren't alive, they are just made of organic materials, which means they contain carbon atoms. Inorganic LEDs are more robust and brighter than organic ones, but they're also bulkier as result of how they are put together, explained study leader John Rogers of the University of Illinois.

Rogers and his colleagues first set out to make smaller-sized inorganic LEDs after a request from Ford Motor Co. to create a third brake light for cars that would be a thin strip of red LEDs that conforms to the curves of a car bumper.

"So what we were trying to do really is combine some of the advantages of the processing of the organic devices, with the robustness and brightness of the inorganic" LEDs, Rogers told LiveScience.