

# A spray-on light show on four wheels: Darkside Scientific

September 14 2014, by Nancy Owano

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Darkside Scientific recently drew a lot of gazes its way in its video release of a car treated to the company's electroluminescent paint called LumiLor. Electroluminescence (EL) is a characteristic of a material that enables it to emit light in response to an electrical field. The company site said that at subatomic level, the process behind electroluminescence is radiative recombination, also known as spontaneous emission. In radiative recombination, phosphorescent substances emit photons (light particles) in response to alternating electrical current. As Geek.com noted, a custom deployment of this kind of paint with some custom

electronics allows different sections of painted areas to light up independently. Seeing what the company did to the car, one can easily imagine marketing opportunities for this path to eye-grabbing showmanship.

"You can imagine the kinds of things that become possible once you exit the realm of a simple repeating circuit. Connected to something like an Arduino or maybe even a homebrew kit that is pulling data from your ODB 2 port, your vehicle becomes a [canvas](#) for some really futuristic designs," wrote Russell Holly in [Geek.com](#) on Saturday.

"Bringing Good Ideas to Light" is the company's motto. Its specialty is its electroluminescent (EL) coating technologies, turning [light](#) into [paint](#), and its product LumiLor is a sprayable coating system. "Imagine being able to paint light onto an object, without changing its form or function, said the group. The product can be applied to practically any surface, including metal, wood, fiberglass, plastics. (Metals are primed first to insulate them electrically.)

LumiLor as a base coat produces light when you apply current to it but when the power is turned off, surfaces coated with LumiLor return to their normal appearance. Over LumiLor an additional topcoat is applied, typically a tinted clearcoat. The choice of topcoat is up to the user, and factors such as reflected color, sheen, elasticity, weather protection, and impact resistance will determine which topcoat should be used and the ultimate thickness. All that is to suggest that the paint system involves more than picking up a can and spraying it on chosen objects. This is a multistage coating process requiring professional applicators and equipment. Spraying on EL coatings is accomplished with the type of paint guns used in professional paint application shops. "While it is not intrinsically difficult to apply LumiLor, it does require the applicator possess a set of skills and knowledge that are unique to the LumiLor process itself to assure optimum results," said the group. In selecting

colors, for example, because the light emitted by the phosphors in LumiLor occupy a narrow wavelength, additive coloring does not work with LumiLor; a blue-tinted topcoat over green LumiLor does not produce yellow. Also, the life of the coating depends on the "LumiColor" selected, and the frequency and voltage at which LumiLor is driven. Personnel who professionally apply the paint go through a training and certification program.

**More information:** [darksidescientific.com/](http://darksidescientific.com/)

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