R&D Magazine: Windows into Solar Power Sources with Quantum Dots

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A luminescent solar concentrator is an emerging sunlight harvesting technology that has the potential to disrupt the way we think about energy: It could turn any window into a daytime power source.

“In these devices, a fraction of light transmitted through the window is absorbed by nano-sized particles (semiconductor quantum dots) dispersed in a glass window, re-emitted at the infrared wavelength invisible to the human eye, and wave-guided to a solar cell at the edge of the window,” said Victor Klimov, lead researcher on the project at the U.S. Dept. of Energy (DOE)’s Los Alamos National Laboratory. “Using this design, a nearly transparent window becomes an electrical generator, one that can power your room’s air conditioner on a hot day or a heater on a cold one.”