

# Lumenco Achieves 20% Gain in Energy Efficiency - Internal Trials of Solar Panels Retrofitted with Solar Chill™ Nano Tech

*lumencompany.com*

*Solar Chill™ tech creates a nanoscreen, allowing visible light through but reflects the heat. The panel operates cooler at peak efficiency.*

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Lumenco, LLC

(<https://lumencompany.com/>), a global pioneer in light science technologies, announced today the results of internal testing of its patent-pending Solar Chill™ nano technology film. The results showed a 20% gain in efficiency during direct sunlight for silicon photovoltaic panels that had been treated with Solar Chill™ heat-reflecting nano technology film.

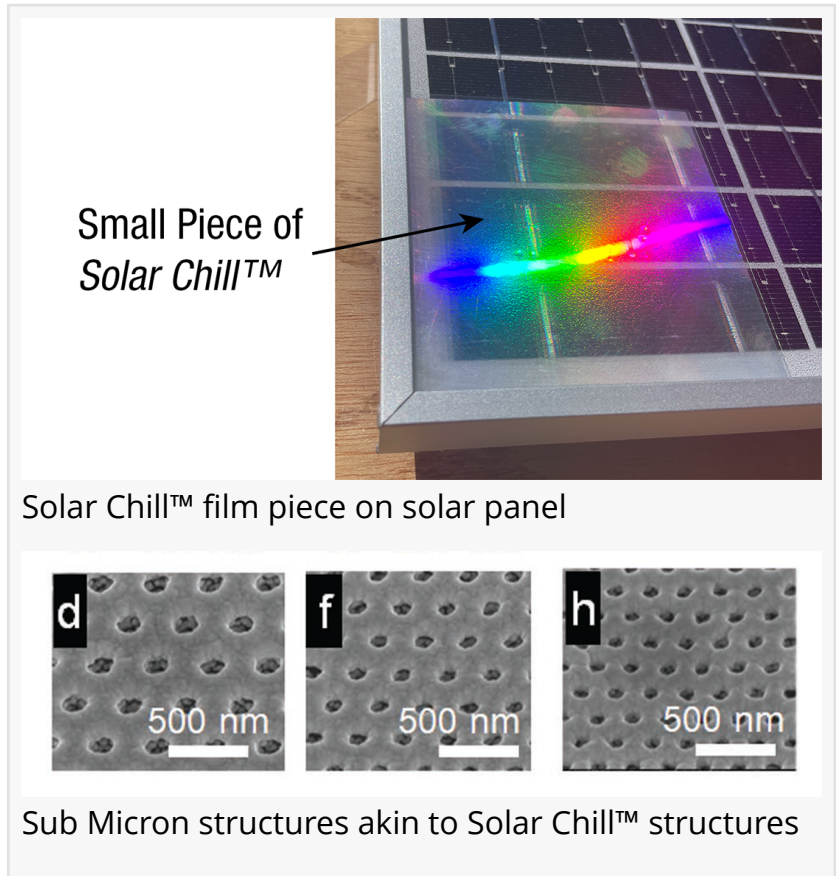
Mark Raymond, CEO of Lumenco and primary inventor, says that the technology is currently at internal lab scale, but that Lumenco plans to move ahead with third-party testing in early October after more than a year of development.

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There is a fine line between great success and absolute failure”

*Mark Raymond*

Lumenco says that the new technology reflects the unwanted heat or infrared wavelengths, while allowing visible light to be absorbed into the photovoltaic panel. He explains, “The technology works much like a screen in the door of a microwave oven, which allows the consumer to safely watch their food cook. The visible light inside the microwave reaches the viewer, but the harmful



microwaves are reflected inside the microwave. Similarly, our Solar Chill™ technology creates a nano mask or screen, which allows visible light through but reflects the longer wavelengths. The result is a panel that reflects heat, operates cooler, and maintains peak efficiency.”

According to Lumenco, Solar Chill™ film can be added as a retrofit onto existing solar panels. For new solar panels, the Solar Chill™ nanostructures can be integrated directly into the EVA adhesive between the glass at the photovoltaic absorber – eliminating the need to add a layer of film. Solar Chill™ technology will not require any change to the panel assembly process during solar panel manufacturing. The technology will be impregnated into the large rolls of EVA adhesive using an automated system prior to panel assembly.

“Ironically,” Raymond shares, “we have had the manufacturing portion of the technology mastered for some time now, as it is similar to the process that we use to manufacture banknote anticounterfeiting features. Our core competency is the scaled production of microstructures.” Regarding commercialization, he explained, “We have self-funded the development of the Solar Chill™ technology up to this point. We have sourced some outside investment; however, we have not accepted any funds yet. We are expecting the valuation of our technology to increase 100X after successful completion of third-party verification in a few months”. Lumenco also just had a major breakthrough in nano scale tooling and was able to produce a full-size Solar Chill™ production tool 1.4 meters by 1.4 meters after over a year of development”.

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About Lumenco:

Lumenco, Inc. was founded in 2012 by Mark Raymond and Hector Porras. Combined, they have been issued over 40 patents for Lumenco in the micro-optic space for currency anticounterfeiting, brand protection, solar, lighting and EMI shielding. Lumenco and founders have been vetted by the Bureau of Engraving, the Federal Reserve, and the Secret Service.

Lumenco has a joint venture with Koenig and Bauer Banknote Solutions in Switzerland and has operations in Mexico City. Mark Raymond has been a speaker on behalf of the Federal Reserve for the Four Nations Group of Central Banks, and his work has been published on several occasions.

Mark Raymond

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