NS Nanotech Increases the Power of its Solid-State Far-UVC Disinfection Light Source

A 60 percent-plus improvement in ShortWaveLight™ 215 Emitter radiant power opens new pathways for human-safe far-UVC disinfection in occupied spaces

The output power of the 1 cm-diameter semiconductor disk embedded in the NS Nanotech ShortWaveLight 215 Emitter increased from 300 to 500 microwatts of 215nm far-UVC light.

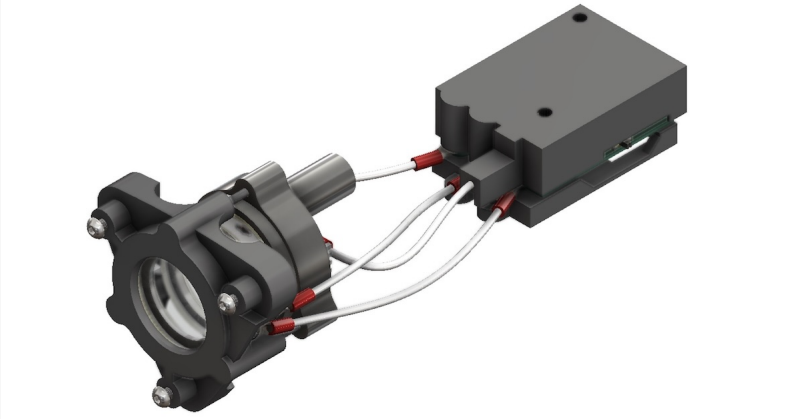
ANN ARBOR, MI, UNITED STATES, April 23, 2025 /EINPresswire.com/ -- NS Nanotech announced it has increased the power output of its far-UVC ShortWaveLight™ 215 semiconductor emitter by more than 60 percent to deliver more effective human-safe disinfection of air and surfaces in occupied spaces. Version 1.1 of the ShortWaveLight 215 Emitter generates 500 microwatts of radiant energy, enough power to constantly disinfect a cubic meter of air in an office cubicle, automobile interior, airplane cabin, or other confined space.

> The additional power output we have achieved with our ShortWaveLight 215 semiconductor chip opens up new pathways for far-UVC photonic disinfection applications"
>
> *Seth Coe-Sullivan, NS Nanotech CEO and Co-founder*

The NS Nanotech ShortWaveLight 215 Emitter, introduced in September 2024, is the world's only solid-state semiconductor to produce 215-nanometer far-UVC light. Far-UVC light at wavelengths from 200-230nm neutralizes airborne pathogens that cause Covid, measles, TB, bird flu, and numerous other deadly diseases. And because the short far-UVC wavelength doesn't easily penetrate skin or eyes, it can be safer to use in occupied areas than traditional forms of UVC light used for disinfection at 254nm and other longer wavelengths.

NS Nanotech increased the output power of its proprietary 1 cm-diameter semiconductor disk embedded in the device from 300 microwatts to 500 microwatts of 215nm far-UVC light.

“The additional power output we have achieved with our ShortWaveLight 215 semiconductor chip opens up new pathways for far-UVC photonic disinfection applications,” said NS Nanotech CEO and Co-founder Seth-Coe Sullivan. “Equally important, Version 1.1 demonstrates the potential for rapid additional ongoing improvements that will be possible with our groundbreaking far-UVC semiconductor technology. We’ve increased power output by increasing device efficiency, so this new level of effectiveness is achieved at the same input power levels to the Version 1.0 device.”



The NS Nanotech ShortWaveLight 215 Module connects the far-UVC emitter (left) to a slim, custom power supply (right) in a product module that provides maximum flexibility for product designers. Single-unit quantities of the integrated module are priced at $350.

The NS Nanotech ShortWaveLight 215 Emitter module integrating the lamp and power supply can be configured at an angle to easily fit in the corner of a wall and ceiling of an ambulance, school bus, or other occupied space to shed far-UVC light.

Proprietary solid-state disinfection application advantages

Unlike gas-based 222nm krypton-chloride far-UVC lamps, the ShortWaveLight 215 Emitter utilizes a solid-state semiconductor that runs cool and enables a small form factor for easy integration into disinfection products designed for close-quarters applications. And unlike semiconductor-based UVC LEDs, which suffer steep reductions in efficiency at wavelengths shorter than 230nm, it efficiently delivers 215nm far-UVC light.

Options for improving gas lamps are limited because their performance is largely fixed by the gases available in the periodic table. NS Nanotech’s semiconductor-based solution offers the ability to dynamically adjust output—allowing users to “dial up or dial down” power and to configure other features to optimize performance across different air and surface disinfection applications.

“The beauty of working with semiconductor technology is our ability to develop and deliver constant improvements in far-UVC disinfection performance, starting with power output and,

eventually, additional form factors and longer product lifetimes," Coe-Sullivan said.

Integrated module for easy installation in confined occupied spaces

NS Nanotech is shipping a ShortWaveLight 215 Module that integrates a compact power supply with the emitter in a modular product design for easy installation in confined occupied spaces where other ultraviolet light sources cannot be easily deployed. Running on a standard 12-volt power source, the power supply is connected to the emitter by a flexible set of wires providing disinfection application designers with optimal flexibility.

The ShortWaveLight 215 Emitter lamp is approximately two inches wide by three inches high, about the size of a small bathroom nightlight, and the modular power supply is compact and slim at less than two cubic inches.

"The power supply and emitter lamp can be aligned vertically, stacked side-by side, or angled in whatever ways work best for any close-quarters application," Coe-Sullivan said. "You can bundle the emitter and power supply in a 45-degree configuration to fit neatly into the junction of the ceilings and walls of buses, ambulances, and other vehicles. And the modules are also small and narrow enough to flush-mount behind a wall."

Expanding potential markets for pandemic prevention

With its compact 215nm far-UVC light source, NS Nanotech intends to help expand the universe of human-safe disinfection applications, especially in small, occupied spaces where far-UVC disinfection was previously impractical or impossible. The ShortWaveLight 215 Module is designed to be the most cost-effective source of far-UVC light, with breakthrough prices set to encourage developers to design and deliver new, affordable photonic disinfection applications for many new markets.

The single-unit price for a module sample integrating the emitter and power supply is $350, less than half the current cost of comparable alternative sources of far-UVC light. Coe-Sullivan said volume price reductions will also be available as production of the module scales to meet demand from application developers marketing end products. NS Nanotech has sold emitter samples to developers working on a range of applications for vehicles, lighting systems, medical services, and other opportunities for close-quarters disinfection.

"By combining the benefits of an efficient solid-state semiconductor with the power of far-UVC light, our ShortWaveLight 215 Emitter opens up entirely new possibilities for photonic disinfection applications that will take the fight directly to SARS-COV2, H5N1 avian flu, measles, TB, polio, and many pathogens that threaten to cause future pandemics," Coe-Sullivan said.

For more information on product pricing and availability, contact Victor Hsia, NS Nanotech head of worldwide sales and business development.

About NS Nanotech

NS Nanotech’s patented technologies, drawing on a decade of work on nitride semiconductors by researchers at McGill University and the University of Michigan, dramatically improve the fabrication process and resulting efficiency of nano-scale light-emitting materials. NS Nanotech's ShortWaveLight™ 215 Emitter, the world’s highest-energy semiconductor ultraviolet light source, enables human-safe air and surface disinfection in occupied spaces with far-UVC light. With headquarters in Ann Arbor, Michigan, and an R&D center in Montréal, Canada, NS Nanotech also develops gallium-nitride nanowire-based LEDs for visible displays based on exclusive licenses to patent portfolios owned by the University of Michigan and McGill University.

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