NS Nanotech Delivers Far-UVC Disinfection With World's Highest-Energy Semiconductor Light Source

A New Class of Light, a New Way to Fight Disease

ANN ARBOR, MI, UNITED STATES, September 10, 2024 /EINPresswire.com/ -- NS Nanotech announced first shipments of its new far-UVC ShortWaveLight™ 215 Emitter, the world's highest-energy semiconductor light source that will enable human-safe air and surface disinfection in occupied spaces.

> NS Nanotech is hitting the sweet spot of far-UVC photonic disinfection with a compact, solid-state 215-nanometer light source for human-safe disinfection applications."
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> *Seth Coe-Sullivan, NS Nanotech CEO and Co-Founder*

The product's unique new design integrates a semiconductor in a compact glass and metal package that generates far-UVC disinfecting light at 215-nanometer wavelengths. Unlike traditional sources of longer-wavelength UVC light, short-wavelength far-UVC light (200nm-230nm) does not penetrate deeply into skin and eyes and can be used to disinfect public spaces without causing harm.

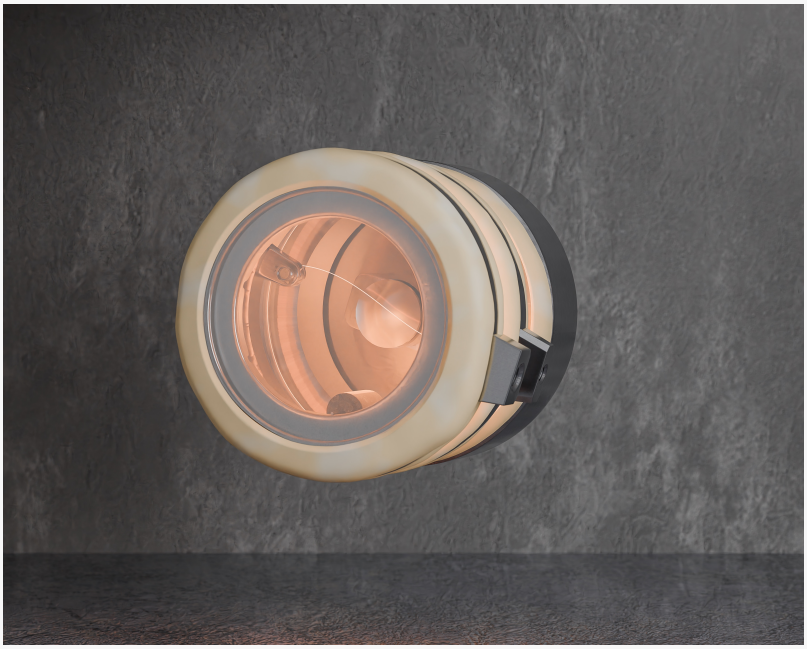
The NS Nanotech ShortWaveLight 215 Emitter is based on breakthrough technologies that set it apart from other current sources of far-UVC light. Unlike gas-based 222nm krypton-chloride far-UVC lamps, it utilizes a cost-effective solid-state semiconductor that runs cool, and its small form factor will enable easy integration into disinfection products. And unlike semiconductor-based UVC LEDs, which suffer steep reductions in efficiency at wavelengths shorter than 230nm, it efficiently delivers the world's highest-energy solid-state light. The result is a powerful new semiconductor-based source of far-UVC disinfecting light.

"NS Nanotech is hitting the sweet spot of far-UVC photonic disinfection with a compact, cost-effective 215-nanometer light source that will help expand the universe of human-safe disinfection applications," said CEO and Co-Founder Seth Coe-Sullivan. "By combining the benefits of an efficient solid-state semiconductor with the power of far-UVC disinfection, our ShortWaveLight 215 Emitter joins the fight against SARS-COV2, H5N1 avian flu, and many pathogens that threaten to cause future pandemics."

Spec sheets, power supply requirements, and single-unit sample pricing are available at 215Emitter@NSNanotech.com

Novel, Patented Technologies Deliver the World's Highest-Energy Solid State Light Source

Because shorter wavelengths deliver higher-energy light, and because no other commercially available semiconductor delivers short-wavelength 215nm light efficiently, Coe-Sullivan said NS Nanotech's new emitter claims the mantle of the world's highest-energy semiconductor-based solid-state light source.



NS Nanotech's ShortWaveLight 215 Emitter integrates a nitride semiconductor that emits far-UVC solid-state light at 215 nanometers for photonic disinfection applications

The ShortWaveLight 215 Emitter is based on a novel, patented design that integrates a thermionic electron-beam cathode and a proprietary nitride semiconductor in a vacuum tube triode that emits high-energy photons at 215nm. As the world's only solid-state source of human-safe 215nm far-UVC light, it offers product developers a new form factor and cost equation for disinfection applications that inactivate viruses, microbes, and other pathogens on surfaces and in the air.

"Future pandemic prevention and biosecurity will depend on novel new products that enable massively deployable mitigation of worldwide airborne and waterborne diseases," Coe-Sullivan said. "The ShortWaveLight 215 emitter pushes the boundaries of semiconductor technology in ways that will enable developers of end products to deliver more and better life-saving photonic disinfection applications."

About Human-Safe Far-UVC Disinfection

Far-UVC light, at wavelengths from 200-to-230 nanometers, deactivates viruses in the air but doesn't penetrate the skin far enough to reach live cells. When it reaches your body, your external "stratum corneum" layer of dead skin cells absorbs the light before it reaches your living cells. And when it reaches your eye, your protective tear layer absorbs the short far-UVC light waves before they can reach your cornea. Therefore far-UVC light can be used in many locations where longer-wavelength 254nm UVC light cannot be used.

Traditional 254nm UVC light sources have been used for disinfection for more than 100 years but

cannot be deployed around people because they penetrate and damage live cells in skin and eyes. To avoid human harm, they can only be used when no one else is in a room. Or they must be enclosed in HVAC systems or installed high in the room and pointed at the ceiling.

Because short-wavelength far-UVC light can be used more safely around people, it can directly disinfect the air and surfaces in locations where people gather. Research has shown that far-UVC light deactivates pathogens safely and effectively. Several Columbia University reports, including one in Nature, and one of many Kobe University studies, explain these advantages in detail. Therefore, far-UVC light enables an entirely new approach to UVC disinfection, enabling constant, proactive disinfection in public spaces, rather than reactive, after-the-fact treatment of air and surfaces.

The first far-UVC light sources have been based on gas-plasma krypton-chloride illumination technologies that produce 222nm far-UVC light. Currently available products have already been successfully deployed in restaurants, schools, offices, stores, homes, and other locations where people need to be protected from viruses and other pathogens. Coe-Sullivan said he expects NS Nanotech's new ShortWaveLight 215 Emitter will expand the universe of photonic disinfection applications that will benefit from a compact new solid-state source of far-UVC light.

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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