

Q&A with Jason Kang, CEO of Kinnos, Inc. bringing to market their Highlight® Additive Solution for Existing Bleach Disinfectants that Colorizes it Blue enabling Hospital Staff and Janitorial Workers to see Exactly where Disinfectant is Applied



Jason Kang
CEO

Kinnos, Inc.
www.kinnos.us

Contact:
Jason Kang
978-314-3127
jason@kinnos.us

Interview conducted by:
Lynn Fosse, Senior Editor
CEOCFO Magazine

CEOCFO: *Mr. Kang, would you tell us about Kinnos?*

Mr. Kang: Kinnos is raising the standard of infection prevention to protect healthcare workers, patients, and the general public. From epidemic outbreaks like Ebola to healthcare-associated infections in hospitals, infectious diseases are being transmitted at a high rate. One of the big problems is that the disinfectants that are used to kill pathogens on surfaces are not being used correctly. Kinnos has developed a technology called Highlight®, which is an additive

“While so many other companies are looking at diagnostics and treatments for infectious diseases, we intend to prevent them from occurring in the first place.”

- Jason Kang

for existing bleach disinfectants that colorizes it blue so you can see exactly where the disinfectant is being applied, and then the color will fade from blue to transparent to tell you when decontamination is done. You can essentially give this to an untrained person, tell them make sure everything is blue, and once the color is gone, you are done.

CEOCFO: *Why is it so hard to do it correctly?*

Mr. Kang: Disinfectants are transparent, so when you spray or wipe a disinfectant on a surface, it is difficult to see where it has been applied, making it easy to miss spots. A study was recently published by Case Western Reserve University, where they applied bleach alone and bleach with Highlight® on a number of common hospital surfaces and then asked healthcare personnel to identify where bleach was applied on the surface. On almost all of the surfaces, the percent accuracy was less than 50%, demonstrating that there is very little confidence in being able to actually visually determine where a disinfectant has been applied. Another big issue is that people do not wait the appropriate contact time to allow the disinfectant to sit on a surface for long enough to kill everything. Disinfectants do not work instantaneously. Workers might wipe off the disinfectant or touch the surface too early when pathogens are still on the surface. The idea with Highlight® is that it eliminates human error by ensuring full coverage and its color-fading property provides real-time feedback for when decontamination is actually done.

CEOCFO: *If someone is going to a hospital and disinfecting a number of rooms, it is going to take time to go back and make sure the color is gone? The need to doing it right clearly is there but does that additional time come into play for people actually using the product?*

Mr. Kang: Looking at the workflow is definitely an important part of our technology. Right now a lot of hospitals have a protocol where there are, for example, 20 high-contact touchpoints that they have to disinfect or in some cases they have

a seven-step process where you start at the bathroom and then you go to the bed rails and so on. What we want to do is allow the housekeepers or the healthcare workers who are doing the cleaning to follow these same protocols. Start with the bathroom, then disinfect the bed rails, do the countertops, and once you finish your routine, you can go back to the start and make sure the color has faded. One thing we see right now is that some hospitals will tell their healthcare workers that the disinfectant is corroding the surface, so you want to minimize the amount of time they are on there. So after the contact time has been met, housekeepers are supposed to wipe off the disinfectant. However, what happens in practice is that a lot of people will wipe the surface with the disinfectant and then immediately take it off without waiting the full amount of time. We are solving that problem where you make sure that it is on there long enough.

CEOCFO: *You have Highlight® Sprays and Highlight® Wipes, when would either be appropriate?*

Mr. Kang: We started the company in response to the Ebola outbreak when we were still undergrads at Columbia and we got looped into this world of decontamination when Columbia brought in first responders to talk about the challenges they were facing. One of the biggest challenges was the high rate of infection transmission amongst healthcare workers. The protocol is to use a bleach spray to disinfect their hazmat suits, medical tents, and other surfaces in the healthcare setting. That is where the technology for Highlight® Sprays was born. It is a powder that you dissolve into bleach solutions which you can then spray on surfaces. We won a grant from USAID to develop the product and field-tested it in Ebola Treatment Units in Liberia and Guinea. Not only is Highlight® Sprays applicable for epidemic response, but we have also been expanding implementation to laboratories and universities who need to disinfect their biosafety cabinets or bench tops, or for biosafety trainings to ensure that their personnel are disinfecting correctly. For Highlight® Wipes, it is a lid that snaps onto existing bleach wipe canisters that colorizes the wipe as it is pulled out. We are targeting hospitals with the aim of eliminating human error to combat healthcare-associated infections, which affect one out of every 20 patients in the US. It is crazy that someone might go into a hospital for a minor surgery and come out with a life-threatening staph infection. We are hoping to finish the hospital pilots of the wipe technology early next year and make it commercially available in Q2 2018.

CEOCFO: *Have similar approaches been tried, and what was the stumbling block in coming up with something that would change color and not be harmful?*

Mr. Kang: The problem of human error in decontamination has been well known for the past twenty years. There are other alternative technologies on the market now. You have UV lights, disinfectant foggers and misters. You also have quality control technologies like ATP testing and UV traces. The problem with all of those is that they can be very expensive, require extensive training, and they are not scalable. For example, you cannot ATP swab every square inch of a surface after every cleaning. More than anything, they are all supplementary to basic environmental cleaning. Even if you use a UV light or a fogger in a hospital, you are required to first wipe down the surface with a disinfectant wipe to remove bioburden. The challenge here is how to actually improve the process of cleaning itself and I think that is where our technology is valuable and impactful, because we are enforcing proper technique in real-time. One of our advisors is actually a retired director of R&D at Clorox, and something like Highlight® was top two on his wish list while he was there. I think the challenge of our technology has always been how you get the color to last in the disinfectant at the point-of-manufacture, versus getting the color to fade on the surface when you actually use it. Our solution was creating a point-of-use additive, so pouring the Highlight® powder into a sprayer right before you spray it or pulling a wipe through our Highlight® lid right before you wipe with it. That way, we have much more control over how long the color actually lasts.

CEOCFO: *How is the Fire Department of New York using your products?*

Mr. Kang: The FDNY handles all of the hazmat cases in New York, so when an Ebola patient is transported in New York, the FDNY is responsible for that. The FDNY invited us to demo at Mt. Sinai Hospital and Staten Island University Hospital for two of their Ebola response simulation trainings. The hazmat team found Highlight® highly effective at improving coverage and confidence in their safety, so they ended up being our first customer. It was that sale that made us think about Highlight® less as a project and more as a business opportunity.

CEOCFO: *What are your plans for manufacturing the product?*

Mr. Kang: We have a contract manufacturer for our spray technology and are currently working on setting up a manufacturing pipeline for our wipes lids.

CEOCFO: *Are you seeking investors, funding or partnerships?*

Mr. Kang: We closed a seed round of \$1 million back in February 2017. We may raise another round in mid-2018 depending on the success of our hospital pilots. In terms of what else we are looking for, we are currently expanding sales of Highlight® Sprays, and have been speaking to a number of distributors in the laboratory, biosafety, and military spaces. We are also looking to find partners who work with disinfection in different verticals, beyond just healthcare. There are

definitely applications for our technology in animal husbandry and professional food sanitation, airports and hotels. Finally, we are looking for additional hospitals and healthcare centers who may be interested in using our product.

CEOCFO: *What have you learned from the business side and what surprised you through the process?*

Mr. Kang: I think one of the biggest things I have learned is that you will never feel fully ready or prepared. You can read a lot of books, talk with mentors, get a lot of advice, but the process of actually running the business is very unique to each company. What I have found is that everything you need to know or learn, you will learn along the way.

CEOCFO: *Why is Kinnos an important company?*

Mr. Kang: Our company is driven by a social mission to protect people from infection. As the world has become more interconnected, the transmission of disease has become more prevalent. In the news, you hear about Ebola, monkeypox, MERS, cholera, MRSA, and the list goes on. In hospitals, you have the fact that over 75,000 people in the US alone die each year from something they did not come in with. Our technology has the potential to radically improve the standard of care for people around the world. While so many other companies are looking at diagnostics and treatments for infectious diseases, we intend to prevent them from occurring in the first place.

