

Strathclyde technology to fight healthcare infections in North America

Award-winning technology licensed for commercialisation in US and Canada

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Award-winning technology developed at the University of Strathclyde to combat healthcare-associated infections (HAIs) is the basis of a light fixture, which has been launched in the US and Canada.

The Indigo-Clean™ lighting fixture uses the HINS (High-Intensity Narrow Spectrum)-light environmental disinfection technology and will continuously inactivate a wide range of micro-organisms that are known causes of HAIs, including MRSA (Methicillin-resistant *Staphylococcus aureus*), *C.difficile* and VRE (Vancomycin-resistant *Enterococcus*). The light can operate safely and continuously in the presence of humans, requires no operator, and kills bacteria in the air and on surfaces.

Indigo-Clean™ is being commercialised by Wisconsin-based lighting company Kenall. The agreement reflects Strathclyde's status as a leading international technological university where innovative, impactful solutions to major global challenges are developed. The HINS-light project, which developed the technology, has received Scottish Enterprise Proof of Concept Funding and was named the UK Research Project of the Year in the 2011 Times Higher Education (THE) Awards.

Indigo-Clean™ was unveiled just before the 2015 annual meeting of the Association for Professionals in Infection Control and Epidemiology in Nashville, Tennessee.

Professor Scott MacGregor, Vice-Principal at Strathclyde, developed the HINS-light technology with fellow Strathclyde researchers Professor John Anderson, Dr Michelle Maclean and Professor Gerry Woolsey. The team is based in The Robertson Trust Laboratory for Electronic Sterilisation Technologies (ROLEST) in the Department of Electronic & Electrical Engineering.

Professor MacGregor said: "We have spent a number of years researching and developing HINS-light technology for the purpose of reducing the environmental transmission of pathogens and ultimately reducing HAI in the healthcare setting.

"Our partnership with Kenall in the United States is an exciting new chapter which will see this innovative technology become a commercially available product. We chose Kenall because of their extensive experience in providing lighting for the most challenging healthcare environments where infection prevention is a key consideration."

Indigo-Clean™ uses a narrow spectrum of visible indigo-colored light at an output of 405 nanometers on the light spectrum. This High-Intensity Narrow Spectrum (HINS) light is absorbed by molecules within bacteria, producing a chemical reaction that kills the bacteria from the inside as if common household bleach had been released within the bacterial cells. Because the light is visible, it is lethal to pathogens but can be used safely in the presence of patients and staff.

Evaluation of the technology, as part of Strathclyde's clinical engagement programme, has been ongoing since 2008. The technology and its effectiveness have been the subject of more than 20 peer-reviewed academic publications and 30 conference presentations since then. Strathclyde was granted US patents on the technology in 2012 and 2015 and the licence agreement provides Kenall with rights for the North American healthcare market.

Cliff Yahnke, Kenall's Director of Clinical Affairs, said: "As part of Strathclyde's clinical engagement in the UK over the last seven years, this technology has proven effective in killing bacteria in hospital settings. We are proud that the University of Strathclyde selected Kenall to commercialise this in the US.

"Breaking the chain of infection, from an infected patient, to the environment, to new patient, is vitally important, and the ability of this technology to be in use and effective at all times, will make a huge difference."

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