

## World-first automated endoscope cleaner to fight antimicrobial resistance

November 28 2022



Credit: Aston University

Aston University and Partnership Medical (PML) have completed a



Knowledge Transfer Partnership (KTP), resulting in the development of a revolutionary automated system for the high-level cleaning of endoscopes.

A KTP is a three-way collaboration between a business, an academic partner and a highly qualified researcher, known as a KTP associate.

The <u>project</u> achieved industry-leading levels of cleaning, therefore reducing risks of microbial contamination to patients and lowering rates of morbidity and mortality.

Endoscopes are long, thin tubes with a light and camera at one end. Due to the sensitivity of the materials and electronics they cannot be sterilized in an autoclave (a machine that uses steam under pressure), opening up high potential for microbial cross infection. The automated prototype and new cleaning materials developed resulted in a simple five-minute treatment offering deep cleaning levels 1,000 times greater than anticipated, providing hygiene and microbial reduction levels far superior to those currently possible using conventional manual procedures.

Partnership Medical Ltd (PML), based in Stoke-on-Trent, are specialists in supplying cleaning equipment and consumables for flexible endoscopes, with over 20 years of distributor experience. The company aims to become a leading manufacturer/provider for endoscopic departments in clinics and hospitals worldwide.

The academic team of the KTP included Dr. Andy Sutherland, a reader in organic/polymer chemistry and a member of Aston Institute of Materials Research with expertise in mesocrystal formation and working with nanoparticles. Dr. Sutherland worked alongside Dr. Tony Worthington, a clinical microbiologist and associate professor in biosciences within the College of Health and Life Sciences. Dr. Thien



Duong took part as the KTP associate, bringing expertise in synthetic chemistry.

Justin Briggs, director of Partnership Medical, said, "The impact of the Knowledge Transfer Partnership on Partnership Medical Limited and its staff has been remarkably significant.

"The project has completely facilitated the company's future vision to become a world-leading supplier for endoscope accessories and consumables and paved the way for the formation of a research and development department in the future."

Dr. Andy Sutherland, reader in organic/polymer chemistry at Aston University, said, "If the endoscope cleaning system we have developed successfully passes its <u>clinical trials</u>, it will lead to far cleaner endoscopes being used in hospitals and hopefully prevent people from dying. Accordingly, in terms of impact, we feel our KTP project has the potential to be highly significant."

Provided by Aston University

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