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HKMU licenses tech for non-invasive prostate cancer screening

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For commercialisation of a portable, point-of-care diagnostic platform



Hong Kong Metropolitan University (HKMU) recently achieved its first-ever technology licensing agreement, a milestone in the University's efforts to translate research into impactful, real-world applications. A know-how licensing agreement for a non-invasive electrochemical screening technology, based on foundational research by Prof. A. L. Roy Vellaisamy, Chair Professor of Intelligent Systems in the School of Science and Technology, has been signed with a UK-based healthcare company. The technology offers a highly promising method for the early detection of prostate cancer through a simple urine test.

The licensing agreement with Pinpoint Medical marks an important step in the company's pathway in the development and commercialisation of a portable, point-of-care diagnostic platform.

This platform builds upon technology previously licensed from other universities where Prof. Vellaisamy had worked earlier. Designed to enable clinicians to perform rapid, on-site analysis of urinary biomarkers, the platform aims to facilitate earlier diagnosis and treatment decisions for prostate cancer, ultimately benefiting patients.

Prostate cancer is the second most common cancer and the fifth leading cause of cancer deaths in men worldwide, underscoring the urgent need for more accurate screening techniques for early identification.

The research team has developed a novel system for the highly selective detection of urinary biomarkers. At the heart of the system is a cost-effective electrode coated with a thin, functionalised layer. This newly designed layer is composed of a specific mixture of organic monomers and crosslinkers that create recognition sites capable of selectively binding the target molecules. These specially designed and patterned electrodes create a unique three-dimensional transducer, featuring a “complementary morphological structure” that enables the screening of multiple cancer biomarkers simultaneously using advanced machine learning tools.

The reliability of this innovative sensing platform has been successfully demonstrated through performance comparisons with the clinical gold standard for detecting prostate cancer, showing its high potential as a reliable diagnostic tool.