

## 基於 CHAMP 顯微鏡的現場腫瘤成像

### On-the-Spot Cancer Imaging by CHAMP Microscopy

#### 摘要 Summary

CHAMP 是一款基於人工智能的先進顯微成像系統，將革新癌症手術期間的腫瘤組織評估。這個系統旨在增強手術精度，簡化手術中工序並減少二次手術的需要，為臨床和成本效益帶來裨益。作為外科腫瘤學創新的先鋒，CHAMP 旨在顯著改善患者結果和營運效率，通過將診斷時間從數天縮短至幾分鐘，同時保持準確性。

CHAMP, an advanced artificial intelligence-based microscopic imaging system, is set to revolutionize the assessment of tumor tissue during cancer surgeries. Designed to enhance surgical precision, CHAMP streamlines intraoperative processes and minimizes the need for repeat surgeries, offering clinical and cost-effective benefits. As a beacon of innovation in surgical oncology, CHAMP aims to improve patient outcomes and operational efficiency significantly by reducing the diagnostic timeframe from days to a few minutes with comparable accuracy.

#### 簡歷 Biography

首席研究員 及 負責人 *Principal Investigator and Person-in-charge*



**黃子維教授**是香港科技大學的生物工程學教授，隸屬於化學及生物工程學系，剛於 2024 年晉升為副教授。其研究結合光學/光聲成像和人工智能，以開發創新的醫療成像技術。黃教授是一位在開發快速癌症組織成像工具方面具領導地位的科學家，創辦了醫療科技初創企業「遨天醫療科技有限公司」，以將其研究轉化及應用。

**Prof. Terence Wong** is a rising bioengineering professor at HKUST's Department of Chemical and Biological Engineering, recently promoted to Associate Professor in 2024. His research integrates optical/photoacoustic imaging and artificial intelligence to develop innovative medical imaging technologies. He is a leading scientist in developing tools for rapid cancer tissue imaging, and founded a MedTech start-up, PhoMedics Limited, to translate his research.

#### 商品化進度 / 成熟程度 *Commercialization Progress / Maturity*

## 遨天醫療科技有限公司

由 PhoMedics Limited 開發的 CHAMP 顯微鏡是一款結合人工智能的創新醫療設備，旨在革新全球醫療保健。這款顯微鏡得到政府和學術機構的支持，預計將節省大量醫療資源，為患者提供快速及準確的癌症診斷，並創造出有價值的知識產權。在工業投資和政府支持下，PhoMedics 將刺激本地經濟，培養人才，並鞏固香港作為醫療、醫療和人工智能創新中心的地位，為本港的技術和經濟發展目標做出貢獻。

在 RAISE+的資金支持下，團隊正準備在多間機構啟動大規模的臨床試驗，首輪將專注乳房及肺部兩個器官，以嚴格測試 CHAMP 在乳癌和肺癌病例中的性能和可靠性，確保符合監管標準並能提高癌症患者的生活質素。團隊並將申請香港和中國內地的醫療器材認證，後期將申請美國食品藥物管理局（FDA）認證和歐洲合格認證（CE）。

### PhoMedics Limited

The CHAMP Microscope developed by PhoMedics Limited is an innovative, AI-powered medical device that aims to revolutionize global healthcare. Backed by government and academic institutions, the Microscope is expected to save tons of medical resources, provide rapid and accurate cancer diagnosis to benefit patients, and create valuable intellectual property. With industrial investment and governmental support, PhoMedics is going to stimulate the local economy, cultivate talent, and cement Hong Kong's status as a hub for health, medical, and AI innovation, contributing to the city's technological and economic development goals.

With the support of the new RAISE+ funding, the research team is preparing to launch a large-scale multi-center clinical trial to rigorously test CHAMP's performance and reliability across breast and lung cancer cases as the first coverage of service, ensuring compliance with regulatory standards and improving quality of life for cancer patients. The team is also going to apply for medical device certifications in Hong Kong and Mainland China, followed by the US Food and Drug Administration and Europe CE at a later stage.