



DIGITAL HEALTH 數碼健康

The global ageing population, rising healthcare costs, and increasing prevalence of chronic diseases are creating challenges for healthcare systems worldwide. In Hong Kong, these pressures are compounded by demographic shifts and evolving patient expectations. To address these issues and support Hong Kong's ambition to become a global health innovation hub, ASTRI is advancing digital health technologies centred on non-invasive monitoring, early detection, and AI-driven diagnostics.

全球人口老化、醫療成本上升及慢性疾病日益普遍，為全球醫療體系帶來挑戰。香港同樣蒙受因人口結構轉變及患者對醫療服務的期望日益提升所帶來的壓力。為應對新趨勢，並支持香港升格為全球健康創新樞紐，應科院正積極推進以非侵入性監測、早期檢測及人工智能診斷為核心的數碼健康科技。

ASTRI's digital health technologies focus on improving healthcare efficiency, enhancing personalised medical care, and ultimately elevating the quality of life. Through inventions in preventative health monitoring, medical diagnosis, and medical computing, ASTRI is fostering growth in Hong Kong's healthcare industry while strengthening the city's technological capabilities.

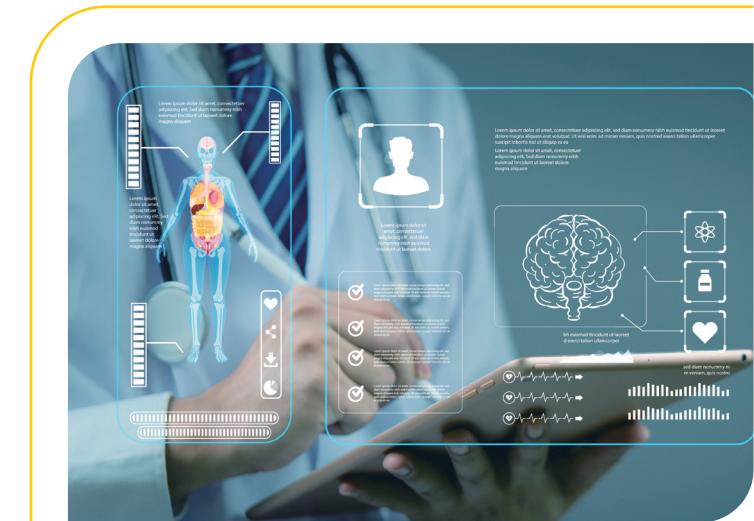
Key breakthroughs include advanced biomedical imaging technologies that are opening new frontiers in medical science, improving patient care, and saving lives. Many of ASTRI's innovations, such as the telehealth technology platform, tracking and monitoring systems for the elderly, intelligent preventive healthcare system, and non-invasive health screening devices, have already been adopted by hospitals, care centres, and healthcare service providers.

By leveraging cutting-edge IoT sensing, AI, and advanced inspection technologies, ASTRI is improving healthcare accessibility, outcomes, and cost-efficiency while reinforcing Hong Kong's position as a global leader in health innovation.

應科院的數碼健康科技以提升醫療效率及加強個人化醫療服務為本，期望最終能改善市民生活質素。透過預防性健康監測、醫學診斷和醫療運算的創新技術，我們全力推動香港醫療行業的成長，並強化香港的科技實力。

當中的重點突破包括先進生物醫學影像技術，開拓醫學科學新領域，從而改善病人護理及挽救更多生命。應科院多項創新技術已獲一眾醫院、護理中心及醫療服務供應商採用，當中包括遙距健康照顧及護理平台、長者追蹤和監測系統、智能預防醫療系統及非入侵性健康檢查設備等。

憑藉先進的物聯網感測、人工智能及高端檢測技術，應科院持續提升醫療服務覆蓋率、治療成效及成本效益，鞏固香港作為全球健康創新領導者的地位。



Research Areas & Focus

研究領域與重點



Technologies Breakthrough 技術突破

In 2024/25, ASTRI made significant advancements in digital health technologies to address healthcare challenges, leveraging innovative solutions to enhance efficiency, improve patient outcomes, and position Hong Kong as a global leader in health innovation. These breakthroughs span areas such as early disease detection, patient monitoring, medication dispensing, and healthcare training, supporting smarter, more sustainable healthcare systems.



System-on-Chip for Capsule Endoscopy

ASTRI has developed an advanced System-on-Chip for Capsule Endoscopy that significantly advances gastrointestinal diagnostic technology. The chip delivers ultra-high-speed data transmission at rates more than seven times faster than existing solutions, enabling substantially clearer images and enhanced diagnostic accuracy. Engineered with a 42% size reduction compared to conventional designs, the chip allows more comfortable patient examinations without anaesthesia whilst reducing infection risks associated with traditional endoscopic procedures. Our commercial partner is advancing towards market launch in 2026, aiming to make gastric cancer screening more accessible and reduce mortality rates through earlier detection and timely intervention.

膠囊內窺鏡專用晶片系統

應科院研發了膠囊內窺鏡專用系統晶片，優化消化道檢測及診斷，其超高速傳輸能力提升逾7倍，令畫質更加清晰，顯著提高診斷準確性；同時晶片體積較傳統設計縮小42%，確立其在膠囊內窺鏡領域的獨特優勢，讓患者在毋需麻醉、降低感染風險的情況下完成更舒適的檢查。合作夥伴現正籌備於2026年把產品推出市場，讓消化道篩查更普及，及早發現和治療有助減低胃癌死亡率。

於2024/25年度，應科院在數碼健康技術方面取得重大突破，以應對醫療挑戰，並透過創新解決方案提升效率及改善病人治療成效，從而推動香港成為健康創新領域的全球領導者。這些技術突破涵蓋疾病早期檢測、病人監測、配藥及醫療培訓等範疇，推動醫療體系邁向更智能及可持續的方向發展。

Multi-Functional Eye Health Checkup Device

ASTRI has developed the world's first multi-functional eye Health Checkup Device capable of conducting comprehensive examinations of the entire eye, from cornea to retina. This groundbreaking technology significantly expands the scope of eye health monitoring, delivering a highly efficient and comprehensive solution for public eye care services.

多功能眼部健康檢查儀器

應科院研發了全球首創多功能眼部健康檢查儀器，可全面覆蓋角膜至視網膜的各部分檢查，大幅擴展眼健康監測的範疇，為公眾眼科護理提供高效而全面的解決方案。



Sensing Fusion for Event-Based Monitoring System

ASTRI has developed a privacy-preserving, event-based sensing system with applications spanning elder care, childcare, and behavioural analysis. The technology incorporates person re-identification capabilities for security and surveillance applications and has been successfully licensed to industry partners for further development and deployment. Integration efforts are currently underway to embed this platform into innovative applications across multiple sectors.

基於事件的傳感融合監控系統

應科院研發了一套注重隱私保護的事件傳感系統，適用於長者護理、兒童看顧及行為分析等多種場景。該技術具備人物再識別功能，可應用於保安監控，亦已授權業界夥伴進一步開發及應用。目前該平台正積極推動整合至各行各業嶄新應用上。



These solutions reflect ASTRI's commitment to enhancing healthcare accessibility, efficiency, and safety through innovation and technology, while strengthening Hong Kong's competitiveness in digital health.

這些解決方案體現了應科院致力藉創新科技提高醫療保健的普及性、效率及安全程度，並確保香港在數碼健康方面保持競爭優勢。

Partnership and Commercialisation

合作夥伴及市場化項目

CHIMP Chest Patch for Patient Monitoring CHIMP胸貼式病人監測裝置

We collaborated with the Hospital Authority and Tin Shui Wai Hospital to conduct a pilot trial of the CHIMP Chest Patch for Patient Monitoring, involving over 3,400 patient-days of observation. The trial, conducted across two hospital wards, received an 80% satisfaction rating from patients. During the collaboration, we gathered valuable professional feedback from medical experts to further refine the chest patch solution. With over 30,000 hospital beds in Hong Kong, there is significant potential for this technology to enhance patient observation and safety. Plans are underway to scale up the user trial to other hospitals in coming year.

Cost-Effective SEN Training Platform 高成本效益特殊教育需要培訓平台

We developed a cost-effective platform for Special Educational Needs (SEN) training that enables initial teachers to conduct one-to-many training sessions. The AI-based system was deployed in three learning centres in Hong Kong, with a successful user trial carried out by a local non-governmental organisation. This platform provides an innovative and scalable solution to improve SEN education and support.

Sensing Fusion Platform for Accurate and Smart Dispensing 用於精準智能配藥的融合感測平台

The Sensing Fusion Platform for accurate and smart drug dispensing is currently under trial at Tin Shui Wai Hospital. This advanced system leverages AI to enhance medication safety and streamline dispensing processes, addressing unique challenges in Hong Kong's healthcare environment.

我們與醫院管理局及天水圍醫院合作，開展CHIMP胸貼式病人監測裝置的試點項目，合共觀察超過3,400個病患日數。這次試驗涵蓋兩個病房，病人滿意度達到80%。合作期間，我們亦收集了專業醫護人員的寶貴意見，以進一步改善胸貼方案。香港現有逾30,000張病床，故相關技術在提升觀察病人安全方面具備巨大潛力，我們正計劃於來年將用戶試驗推展至其他醫院。

我們研發了一個具成本效益的特殊教育需要訓練平台，讓初任教師亦能進行一對多訓練。這個人工智能系統已於香港三間學習中心應用，並由一家本地非政府組織成功進行用戶試驗。此平台為提升特殊需要教育及支援提供了創新而可擴展的解決方案。

這套用於精準智能配藥的融合感測平台目前正於天水圍醫院試用。這套先進系統運用了人工智能提升用藥安全，並簡化配藥流程，以應對香港醫療環境的特殊挑戰。

Project commenced in 2024/25* 2024/25年度開展的研發項目*

Image Restoration and Synthesis for Medical Optical Imaging

醫用光學成像系統的圖像復原與合成

Feasibility Study on Registration of 2D and 3D Multimodal Images for Medical Applications

針對醫療應用的2D和3D多模態影像配準技術的可行性研究

Intelligent Screening for Heart Failure Based on Korotkoff Sounds

以柯氏音為本的智能心臟衰竭篩檢

Trial: AI-assisted Paediatric Occupational Therapy Service for Smart Hospitals

試驗計劃：為智慧醫院提供以人工智能協助兒童職業治療服務

Intelligent Specific Learning Difficulties Screening Approach for SEN Students

專為具特殊學習需要學生而設的智能學習障礙篩查

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