

## Appendix

The CUHK projects that received awards at the 51<sup>st</sup> International Exhibition of Inventions Geneva:

No.	Awards	Principal investigator and team members (Department)	Project title	Project description
1	Gold Medal with Congratulations of the Jury	Professor Chong Yuen Yu, Professor Chien Wai Tong (The Nethersole School of Nursing)	Artificial Intelligence Driven Virtual Client System and Method for Real Time Simulated Supervision and Training in Acceptance and Commitment Therapy (ACT)	An AI driven virtual client platform delivers multilingual Acceptance and Commitment Therapy (ACT) simulations for counsellor training with realistic verbal and nonverbal behaviours. Cloud-based speech-to-speech coaching offers real-time guidance; our patented ACT LLM evaluates counsellor fidelity and generates transparent competence reports within minutes.
2	Gold Medal with Congratulations of the Jury	Professor Li Zhong Alan, Liu Jun (Department of Biomedical Engineering)	A multigradient organ-on-a-chip system for modeling complex tissue interfaces	This novel organ-on-a-chip system accurately replicates complex gradient signals at tissue interfaces in human body. This breakthrough enables reliable disease modeling and drug testing, paving the way for safer, more effective treatments and advancing medical research.
3	Gold Medal with Congratulations of the Jury	Professor Song Chunshan, Dr. Ye Pengxian, Dr. Miao Guang, Tang Zihui (Department of Chemistry)	Integrated biowaste-to-green fuels generator	We transform biowastes to green fuels at ambient conditions via our all-in-one generator combining unique sorbents and low-temperature plasma catalysis. Powered by renewable electricity, our patented system delivers a full life-cycle circular economy solution to turn waste into worth.
4	Gold Medal with Congratulations of the Jury	Professor Ma Peifeng (Department of Geography and Resource Management)  Professor Wu Zherong, Mr. Zheng Yi, Mr. Yu Chang, Mr. Ye Guangen, Dr. Wang Zhanze (Institute of Space and Earth Information	AI-Enhanced InSAR Data Processing Software for Urban Health Monitoring	The eSat integrates satellite Interferometric Synthetic Aperture Radar with AI-assisted analysis for large-scale, mm-level deformation monitoring. Acting as an “Urban CT Scanning” tool, it enables infrastructure health diagnosis and risk assessment.

		<p>Science)</p> <p>Professor Lin Hui (Jiangxi Normal University)</p> <p>Logistics and Supply Chain MultiTech R&amp;D Centre</p>		
5	Gold Medal and Saudi Innovation Excellence Prize - Ministry of Health	<p>Professor Ng Siew Chien, Professor Chan Ka Leung Francis, Dr. Lau Raphaela Iris, Dr. Xu Zhilu, Dr. Zhu Wenyi (Department of Medicine and Therapeutics)</p>	<p>A novel synbiotic formula (SLD07) for liver health</p>	<p>SLD07 is a novel synbiotic formulation designed for metabolic dysfunction-associated fatty liver disease (MAFLD). In preclinical models and a pilot clinical study, SLD07 was associated with reductions in liver fat and stiffness, improved metabolic parameters, and a favourable safety profile.</p>
6	Gold Medal	<p>Professor Cheung Yim Lui Carol (Department of Ophthalmology and Visual Sciences)</p> <p>Professor Mok Chung Tong Vincent, Professor Ko Ho Owen (Department of Medicine and Therapeutics)</p>	<p>For early screening of Alzheimer's disease and assessment of brain health</p>	<p>i-Cog Brain Health assesses brain health and screens for Alzheimer's disease simply by analyzing retinal (eye) photographs. By recognizing subtle patterns in the retina, the system can detect signs related to brain aging, dementia risk, reduced cognitive function, and microvascular changes. i-Cog Brain Health has demonstrated strong internal and external accuracy in identifying Alzheimer's dementia. I-Cog Brain Health allow fast, non-invasive analysis and report generation.</p>

7	Gold Medal	Professor Wang Xin, Dr. Luo Tianli (Department of Surgery)	Precision Nanobody- RiboTAC Platform: Targeted RNA Degradation Therapy	An intelligent therapeutic platform integrating nanobody delivery with programmable RNA degradation. Leveraging clinical samples and hospital partnerships to precisely eliminate oncogenic drivers. A scalable approach to precision medicine beyond oncology.
8	Gold Medal	Professor Wang Xin, Dr. Wang Xiangeng (Department of Surgery)	Methods For Identifying Non-Canonical Neoepitopes	Develop an integrated long-read transcriptomics and immunopeptidomics workflow to discover non-canonical neoepitopes from novel isoforms and other ORFs, improving antigen identification in low-tumor mutational burden cancers (e.g., pancreatic cancer) and prioritizing candidates for immunogenicity validation.
9	Gold Medal	Professor Yu Jun (Institute of Digestive Disease Department of Medicine and Therapeutics State Key Laboratory of Digestive Disease)	An innovative RNF180 methylation detection kit for non-invasive diagnosis of gastric cancer	Detecting gastric cancer via endoscopy is vital for prevention, though its high cost and invasiveness remain major drawbacks. To reduce discomfort, we developed a plasma RNF180 kit as an innovative non-invasive tool for early diagnosis of gastric cancer.

10	Gold Medal	Professor Yu Jun, Professor Wong Wai Sun Vincent, Professor Zhang Xiang Jennifer (Institute of Digestive Disease Department of Medicine and Therapeutics State Key Laboratory of Digestive Disease)	A novel blood-based biomarker panel for non-invasive diagnosis of metabolic dysfunction-associated steatohepatitis	Metabolic dysfunction-associated steatohepatitis (MASH) is a common chronic liver disease worldwide. Liver biopsy is the gold standard of diagnosis but it is costly and invasive. We identified and developed novel blood biomarkers for non-invasive MASH diagnosis.
11	Gold Medal	Professor Jiang Yangzi, Dr. Zhu Xiaobo, Dr. Li Kejia (School of Biomedical Sciences, Faculty of Medicine, Institute for Tissue Engineering and Regenerative Medicine, Department of Orthopaedics & Traumatology, Center for Neuromusculoskeletal Restorative Medicine)	New Disease-Modifying Osteoarthritis Drug (DMOAD): AFlexOA	A groundbreaking disease-modifying osteoarthritis drug (DMOAD) administered as a monthly intra-articular injection, offering pain relief and disease-modifying effects, including anti-inflammation, cartilage preservation, and maintenance of subchondral bone homeostasis, while utilizing significantly lower drug doses compared to conventional treatments.
12	Gold Medal	Professor Yam Cheuk Sing Jason, Professor Tham Chee Yung Clement, Professor Pang Chi Pui, Professor Chen Li Jia, Dr. Yim Cheuk Ling Charlene, Dr. Zhang Yuzhou (Department of Ophthalmology and Visual Sciences)	Automatic Myopia Screening System	A “three-in-one” framework integrating automatic measurement devices, a central data platform, and AI-assisted analysis with personalized reports is designed to meet the demands of large-scale children eye screening, which are essential for preventing future blindness.
13	Silver Medal	Professor Wong Wing Tak Jack, Dr. Zong Jiuyu, Dr. Liu Conghui, Dr. He Chufeng, Mr. Cheung Yiu Ming (School of Life Sciences)	Leveraging Type 2 Cytokines to Enhance Cell-based Therapy for Peripheral Arterial Diseases	We develop Super iPSC-derived endothelial cells primed by type-2 cytokines to restore blood flow and muscle regeneration in “no-option” critical limb ischemia. A single intramuscular injection enables off-the-shelf therapeutic angiogenesis,

				with planned IIT in China and expansion to other ischemic vascular diseases.
14	Silver Medal	Professor Wang Xin, Dr. Nie Xiuping, Dr. Zhang Xianrui (Department of Surgery)	CT4CMS: An Intelligent System for Non-Invasive Prediction of Consensus Molecular Subtypes in Colorectal Cancer Using Preoperative CT Images	CT4CMS is a next-generation AI-powered system designed to transform colorectal cancer diagnosis and management. By leveraging preoperative CT imaging, it non-invasively predicts the Consensus Molecular Subtypes (CMS) of colorectal cancer with accuracy comparable to traditional genomic methods.
15	Silver Medal	Professor Yu Jun (Institute of Digestive Disease Department of Medicine and Therapeutics State Key Laboratory of Digestive Disease)	Faecal miRNA detection kit for early colorectal cancer non-invasive diagnosis	Early diagnosis by colonoscopy is key to prevent colorectal cancer, but this procedure is costly and uncomfortable. We developed a novel screening tool based on microRNA changes in stools, providing a new non-invasive means for early detection of colorectal cancer.
16	Silver Medal	Professor Lai Jiewen, Liu Yanjun, Professor Ren Hongliang (Department of Electronic Engineering)	Single Tendon-Driven Continuum Robots with Push-Pull-Twist Actuation Mechanism	Conventional multi-tendon continuum robots face space constraints, actuation complexity, and limited omnidirectional motion. We developed a single-tendon system with push-pull-twist mechanism that achieves 3D spatial manipulation, enabling miniaturization, simplified control, and large working channels for surgical and industrial uses.

Other projects in which CUHK participated that received awards:

No.	Awards	Principal investigator and team members (Department)	Project title	Project description
1	Gold Award	<p>Professor Ma Peifeng, Dr. Zheng Zhi (Department of Geography and Resource Management)</p> <p>Professor Wu Zherong, Mr. Zheng Yi, Mr. Yu Chang (Institute of Space and Earth Information Science)</p> <p>Mr. Chen Zening (Office of Academic Links (Mainland and Regional))</p> <p>Professor Liu Lin (Department of Earth and Environmental Sciences)</p> <p>Professor Li Hongsheng (Department of Electronic Engineering)</p> <p>Professor Kwan Mei-Po (Institute of Space and Earth Information Science)</p> <p>Logistics and Supply Chain MultiTech R&amp;D Centre</p>	AI Large Language Model–Powered CUHK Remote Sensing Satellite System for Near-Real-Time Disaster/Geohazard Monitoring	Powered by AI onboard large language models (LLMs), the satellite enables near-real-time in-orbit data analysis, effectively reducing data-to-decision latency and delivering rapid geospatial intelligence for disaster monitoring in support of sustainable development.