

2025

NEWSLETTER

ISSUE 06

ABIC Garners Six Awards



At the
50th International
Exhibition of
Inventions Geneva

The Advanced Biomedical Instrumentation Centre (ABIC) has achieved remarkable success at the 50th International Exhibition of Inventions Geneva (IEIG), a premier global showcase for innovation. ABIC was honored with six prestigious awards, a testament to the Centre's world-leading research and development.

The accolade includes two Gold Medals and the distinguished Gold Medal with Congratulations of the Jury—a special prize reserved for exceptional inventions. The award-winning projects represent a series of cutting-edge biomedical advancements designed to address pressing global health challenges.

ABIC showcased a series of cutting-edge biomedical inventions that address critical global healthcare challenges. The award-winning projects featured diverse key areas, including artificial intelligence (AI), microfluidic diagnostics, targeted cancer therapeutics, and personalized drug screening—each embodies the Centre's continued commitment to transforming cross-disciplinary scientific discoveries into new generations of accessible and effective applications of precision medical tools and platforms.

Gold Medal with Congratulations of the Jury: A New Benchmark in PCR Diagnostics

Next-generation PCR: Revolutionary Microfluidics Approach for Efficient Multiplex In Vitro Diagnostics

Dr. Wenshan Zheng, Prof. David A. Weitz, Prof. Anderson Shum, Dr. Xing Zhao, Dr. Yulin Zhang, Ms. Sijie Chen, Dr. Peiye Li, Mr. Hon Yin Leung, Dr. Stella Chu, Mr. Yue Zhu

The next-generation PCR can realize highly multiple DNA target detection (up to 1,000,000) at a time. It can provide accurate, affordable, and fast diagnostics for many diseases, such as non-invasive prenatal testing, cancer, and infectious diseases.



Dr. Yulin Zhang,
Project Representative Presenter



ABIC's Award-Winning Innovations Across Healthcare Frontiers

Gold Medal with Congratulations of the Jury

Next-generation PCR:
A Revolutionary
Microfluidics Approach
for Efficient Multiplex In
Vitro Diagnostics



Gold Medal

3D Biomimetic
Personalized Drug
Testing Platform
for Acute Myeloid
Leukemia (AML)

Gold Medal

All-natural Nanorobot
for Precise and Rapid
Colon Cancer Therapy

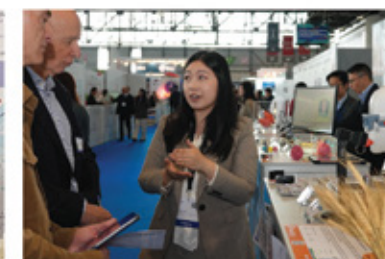
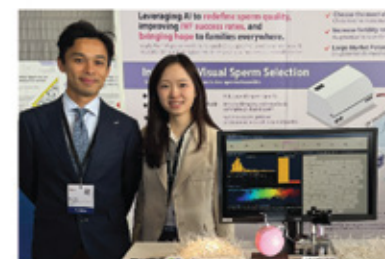


Silver Medal

Interaction-based
Droplet Sorting
(InDroS)

Silver Medal

Intelligent Visual
Sperm Selection



Bronze Medal

Multi-functional
Corneal Bandage
(MFCB) for the
Treatment of
Ocular Surface
Diseases

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Congratulations to our exceptional teams! Their record-setting success in Geneva reinforced a testament to their ingenuity and dedication in pushing the boundaries of biomedical instrumentation, bridging interdisciplinary research excellence and societal needs with real-world impact.

The innovations showcased ABIC's international standing with strong commitment to developing a translational research ecosystem that delivers tangible clinical value to practically improve public health.

We are incredibly proud of their accomplishments and look forward to continuing this remarkable momentum.

— Prof. Paddy Chan, Centre Co-Director, ABIC

IEIG 2025: A Global Stage for Biomedical Innovation Excellence

The International Exhibition of Inventions Geneva (IEIG), held annually in Switzerland, is recognized as one of the world's most renowned and leading platforms for showcasing novel scientific research advancements. The 2025 exhibition has attracted more than 1,050 invention entries from across 35 countries and regions, highlighting the event's global attention and competitiveness. ABIC's success in Geneva reflects its influential leadership in shaping the forefront of interdisciplinary biomedical innovation and its growing reputation as a hub for impactful research and international collaborations.



ABIC PITCHING CORNER 2025: A DUAL STAGE DRIVING DISCOVERY FORWARD

The Pitching Corner aims to provide a dynamic platform that cultivates entrepreneurial mindsets by encouraging the Centre's emerging biomedical researchers to pitch their high-impact, innovative ideas and seek feedback from external stakeholders, including industry collaborators, academic mentors, and potential investors. Each researcher will deliver an 8-minute pitch, followed by Q&A session. Winners will be awarded in recognition of innovation excellence and potential for scalable outputs.



Mr. Gallen Leung

Mr. Tao Zou

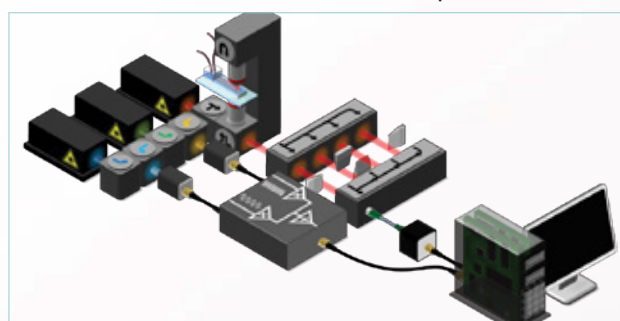
Ms. Carol Liu

Prof. Paddy Chan

From Vision to Voice: ABIC Launches Pitching Corner Round 1

On 25 April 2025, the event welcomed a diverse cohort of aspiring innovators showcasing biomedical proposals at Round 1 Final. Among these promising project gems, two proposals stood out for their originality, applicability, and potential societal impact:

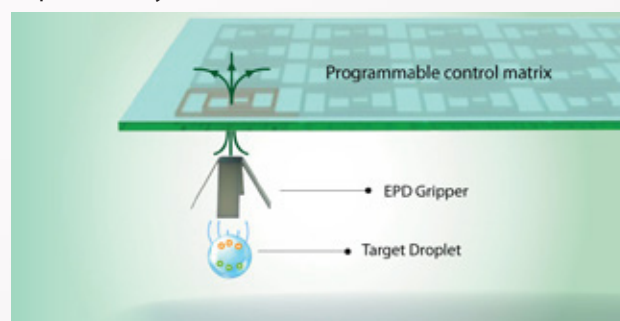
Deep Visual Immune Cell Profiling (Deep VICP) presented by Mr. Sam Ho, supervised by Prof. Kevin Tsia in collaboration with Prof. Desmond Yap



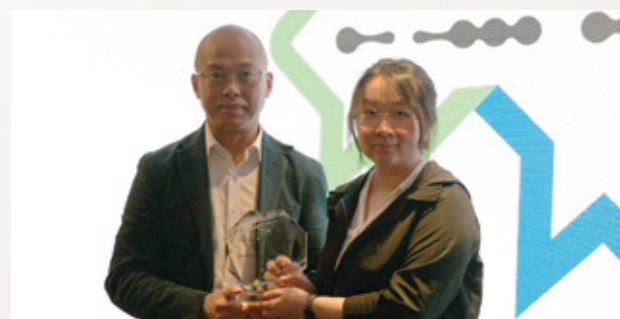
An algorithm for the detection of immune cell activity capable of identifying early-stage anomalies in the kidney.



Electret-induced Polarization on Droplet (EPD) presented by Dr. Ruotong Zhang, Dr. Zheqi Chen, and supervised by Prof. Anderson Shum



A low-cost, versatile and biocompatible module for the manipulation of microfluids, significantly improving existing EWOD products.



Congratulations to all the winners and sincere thanks to the many brilliant minds for their inspiring participation, especially our distinguished judging panel, **Dr. Yennie Pang, Paediatric Specialist; Mr. Mike Lam, Angel Investor, Formerly Head of Startup Incubation and Investment; and Mr. Henry Lai, Associate Director at HKSTP (Investment Services)**, with their valuable time, feedback and encouragement. As the Pitching Corner advances to its next stage, ABIC looks forward to spotlighting more transformative ideas that bridge research excellence and real-world applications.

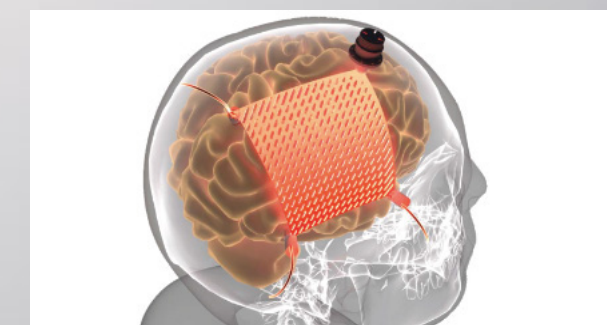
From Voice to Impact: ABIC Pitching Corner Round 2 Showcases Biomedical Excellence

On 28 August 2025, ABIC hosted the Pitching Corner Round 2 Final at HKSTP, bringing together professional researcher teams, thought leaders, and industry partners to foster an ecosystem of shared learning, mentorship, and growth that empowers industry connections to collectively translate scientific discoveries into tangible impact.

The campaign showcased 9 shortlisted projects with cutting-edge research solutions, spanning a remarkable breadth of high-potential innovations, including 4th-Gen PCR for multi-cancer early detection, 3D bioprinting, drug solubility, Vitamin D3 nasal spray for stroke rescue, minimal invasive brain-computer interface, visionary eye-care solutions, technology system for quantum diamond, 3D microscopy, and AI-powered maternal-infant nutrition support.



Sincere thanks to our distinguished judging panel, Mr. Gallen Leung, Ecosystem Development Lead of Alibaba Cloud HK, MO & KR, and Ms. Carol Liu, Associate Director of Startup Ecosystem (Incu-Bio) at HKSTP, for their valuable time and encouragement, and to all our professional guests for their support in co-building a vibrant platform that nurtures ideas, cultivates leadership, and accelerates translations of bold ideas in shaping the future of healthcare.



Congratulations to the Talent Pitching Award winners, Mr. Tao Zou (Supervisor: Prof. Paddy Chan), for their extraordinary project titled "Minimal Invasive Electrographic Brain-Computer Interface (ECoG-BCI)".

AxileLife: A Future in Bloom

Planting the Roots of Life Through AI-Powered Fertility Care

An ABIC-Incubated Spinoff — A Bridging Story of Promise

At the heart of every biomedical breakthrough is a story to tell. For AxileLife Limited, that story begins with a name: Axile, inspired by a botanical structure resembling the placenta, the origin of human life.

To the founders, AxileLife represents far more than a brand; it encapsulates a vision of nurturing life from its earliest beginnings: to bring light and restore hopes for families with gifts of parenthood, and to deliver solutions to many whose dreams of children have remained unfulfilled.

Incubated under InnoHK ABIC as the Centre's spin-off company, AxileLife was born from a shared urgency to reshape the future of reproductive care. The company was founded by a multi-disciplinary research team from the Department of Obstetrics and Gynaecology, and Department of Electrical and Electronic Engineering at the University of Hong Kong (HKU): Prof. Kevin Tsia, Prof. Philip Chiu, Prof. Ernest Ng, Dr. Michelle Lo, and Dr. Erica Leung. Their innovative solution is Intelligent Visual Sperm Selection (IVSS) system, a pioneering AI-driven precision platform that automates sperm assessment to select the most viable candidates for fertilization, marking a significant leap forward in Assisted Reproductive Technology (ART).

Clinical Impact and Urgent Needs

Traditional sperm selection depends on manual observation under a microscope with naked eye, a process that is time-consuming, error-prone, and limited by human subjectivity, which takes half an hour for a single selection. AxileLife's IVSS system completely changes that paradigm, utilizing high-throughput deep learning algorithms and high-resolution microfluidic imaging analytics to quantify morphology, motility, and even sperm functionality in real-time, through a data-driven, automated, and

scalable process designed for seamless integration and minimal training. Globally, infertility affects around 14% of couples, and many turn to ART such as in vitro fertilization (IVF) to conceive.

With current success rate of only 30%, the process remains physically demanding, emotionally draining, and discouragingly expensive, often requiring repeated cycles of ovarian stimulation, egg retrieval, and embryo transfer. Many couples abandon treatment not because they lose the desire for a child, but because the process becomes unsustainable, which is a painful reminder of how uncertain the road to parenthood can be.



Dr. Michelle Lo
CEO of AxileLife,
Post-Doctoral Fellow of ABIC



Prof. Kevin Tsia
Founder of AxileLife,
Co-Principal Investigator of ABIC



For many, Assisted Reproductive Technology (ART) is not one of many options; it's the only option. At AxileLife, we are here to ensure that this one last chance is also their best chance.

Dr. Michelle Lo, CEO of AxileLife,
Post-Doctoral Fellow of ABIC

Clinicians have encountered cases involving cancer patients who could only preserve a final batch of sperm or eggs prior to radiotherapy or chemotherapy. For individuals alike whose reproductive future rests entirely on a single attempt, AxileLife's intelligent selection turns what could be a last opportunity into a renewed possibility for life.

Indeed, AxileLife's IVSS system is designed not only to assist embryologists but to standardize protocols and elevate the entire sperm selection process across clinics. With just a click, fertility clinics can gain benefits of higher success rates, streamlined clinical workflows, and reduced technician variability, thereby enhancing their overall competitive standing in the growing global fertility market, which highlights the system's market potential.

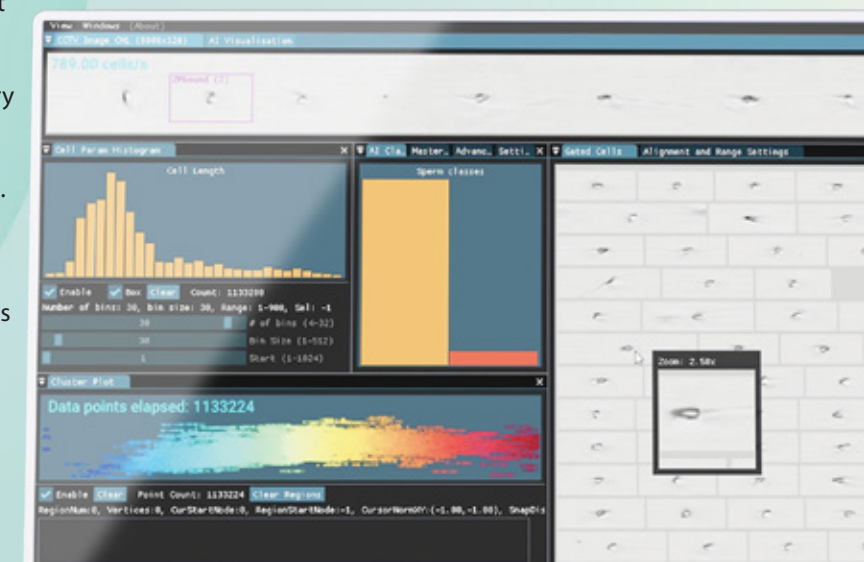
Yet launching a new standard of fertility care does not come without challenges. "AxileLife's breakthrough depends on a proprietary, self-developed chip engineered to capture high-resolution images of every single sperm cell, previously deemed unattainable in conventional methods," explained Prof. Kevin Tsia, Founder of AxileLife, Co-Principal Investigator of ABIC. "With years of research work aimed at overcoming technical barriers in micro-optics, fluid dynamics, and real-time imaging, AxileLife has finally developed a chip that generates objective scores and visualizations of each sperm, allowing personalized, informed, consistent selections within seconds."

Promise for the Future

Looking ahead, AxileLife's product will be launched online, enabling clinics worldwide to upload images and receive free AI-based sperm scoring evaluations, ensuring patients receive quality care regardless of geographic location. Their ultimate goal is all-in-one service with end-to-end reproductive intelligence tailored for every stage of fertility care, including



embryo evaluation, egg assessment, and culture monitoring. The product is estimated to be market-ready for clinical use within two years, with widespread mainstream deployment projected within five years. True to its name, AxileLife stands as a vital placenta axis: a beginning point for countless lives yet to be born.



ABIC InfoTalk: Exploring Generative AI in the Health Industry

On 28 August 2025, ABIC hosted InfoTalk featuring the distinguished speaker, Ms. Jiaying Fan, Senior Product Solutions Specialist of Alibaba Cloud, who delivered a compelling session titled:

“ALICLOUD – Generative AI: Exploration and Practice of GENAI in the Health Industry”

The session highlighted how Generative AI (GENAI) is streamlining clinical workflows, reshaping biomedical research, and advancing healthcare delivery. Ms. Fan provided practical

insights into Alibaba Cloud's approaches and shared real-world examples of how GENAI is being applied across the health ecosystem.

The InfoTalk sparked inspiring dialogues among ABIC researchers, clinicians, and innovators, reinforcing the transformative potential of AI-driven solutions in advancing global healthcare. This informative session reflects the Centre's commitment to fostering knowledge exchange and exploring how AI technologies can empower healthcare providers to overcome longstanding challenges in medical efficiency, scalability, and patient-centered decision making.



Shaping Tomorrow's Health: ABIC at ASGH 2025

On 26–27 May, ABIC participated in the Asia Summit on Global Health (ASGH) 2025, showcasing six award-winning biomedical projects featuring impactful translational science.

The event offered a premier platform for researchers to connect with potential collaborators and investors during the deal-making session, attend thought-provoking seminars featuring world-renowned speakers, and engage in insightful discussions with industry stakeholders.

Special thanks to Prof. David Weitz, Centre PIs, and researchers for representing ABIC and introducing our projects through live presentations, investor matchmaking, and on-site networking that strengthened the Centre's strategic outreach and visibility!

A big thank you to all the healthcare leaders, innovators, and partners for their support in visiting our exhibition booth. Together, ABIC is poised to drive transformative advancements in global health through bold innovation, joint ventures and international engagement.

