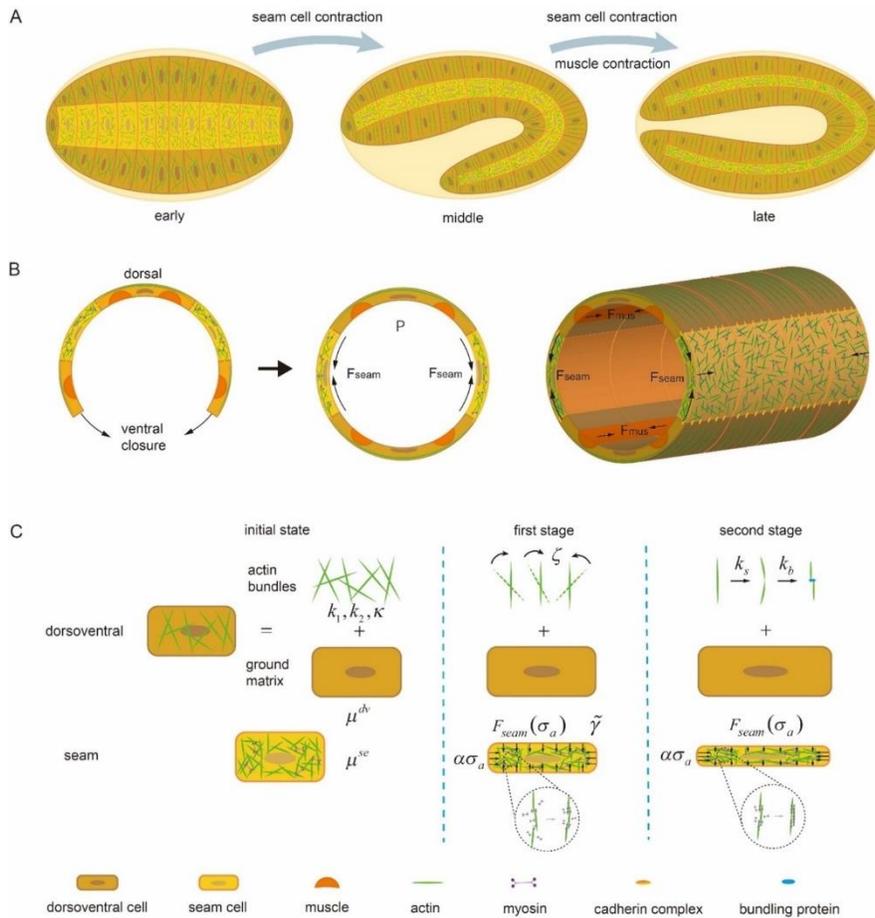




Oct 2021/ No.3

RESEARCH

Breakthrough in cell mechanics discovers abnormal embryo elongation for early treatment



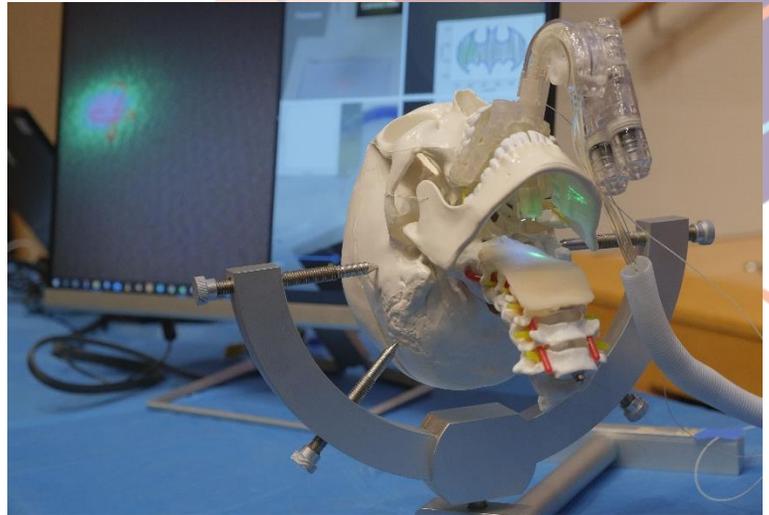
Fetal abnormalities are of concern to all prospective parents, and many of these problems originate from abnormalities in the development of the embryo particularly during its elongation and division.

In a recent breakthrough, a research team led by Dr. Yuan LIN, Associate Professor of the Department of Mechanical Engineering at the University of Hong Kong (HKU) has shed critical insight on what causes abnormal embryo elongation, and possible new ways of treating those disorders. The findings have been published in Science Advances.

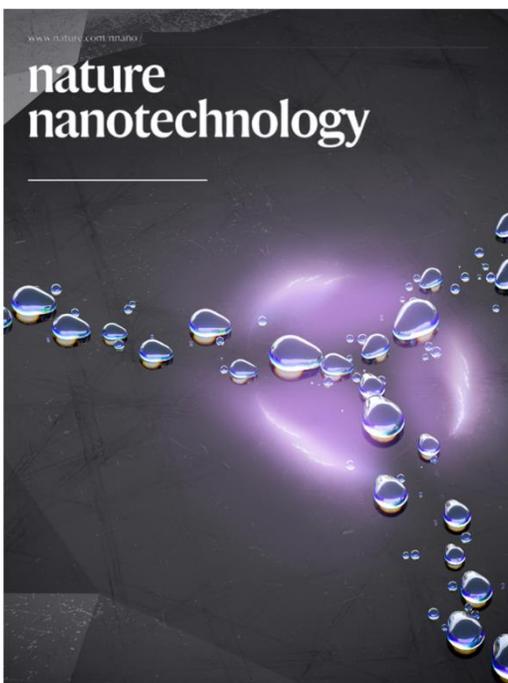
Earlier studies with model organism *Caenorhabditis elegans* revealed, during its development, that the embryo of the organism undergoes a several-fold extension, driven by contractile forces generated in muscle and seam cells in the embryonic wall...[Read more](#)

Soft Robotic Manipulator for Intra-operative MRI-guided Transoral Laser Microsurgery

A joint research team of engineers and clinicians from HKU and The Chinese University of Hong Kong (CUHK) has recently developed a soft robotic manipulator for magnetic resonance (MR) imaging (MRI)-guided transoral laser microsurgery (TLM). Dr. Ka-Wai Kwok and his research students Ge Fang, Marco Chun Kit Chow, Justin Di-lang Ho, Zhuoliang He, Kui Wang (Department of Mechanical Engineering, HKU) worked out the prototype with Dr. James Tsoi (Faculty of Dentistry, HKU), Dr. Jason Chan and Dr. Catherine Chan (Department of Otorhinolaryngology, CUHK). This innovation has recently been published in Science Robotics...[Read more](#)



HKU scientists make breakthroughs in droplet manipulation

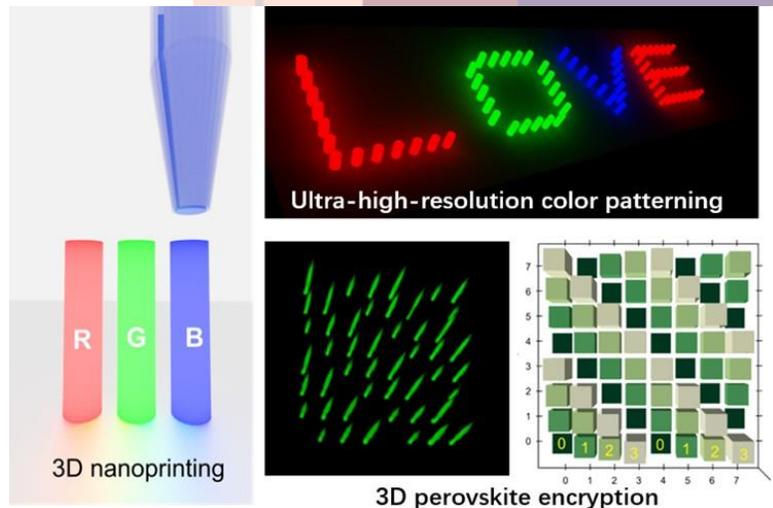


A researcher team led by Professor Liqiu Wang, Chair Professor of the Mechanical Engineering at the University of Hong Kong (HKU) have made key breakthroughs in the manipulation of droplets. Droplet manipulation is critical in many fields and often encompasses both in-plane and out-of-plane droplet control. For the in-plane control, directed, long-range self-propulsion of fluid on solid surfaces is fundamental to thermal management, desalination, materials self-delivery, and numerous other applications...[Read more](#)

3D printed nanopixels: finer, brighter, and smarter

Obtaining both ultra-high-resolution and high-brightness is a long-cherished wish in the display industry. However, downsizing display pixels loses their brightness, which remains a longstanding issue.

Recently, postdoc fellow Dr. Mojun Chen and a team led by Dr. Ji Tae Kim (jtkim@hku.hk) from HKU Mechanical Engineering reported nanoscale 3D printing of perovskite color pixels. The developed 3D printing method offers outstanding lateral pixel dimensions ...[Read more](#)



Dr Ka-Wai Kwok was awarded ITF fund for development of robot assistant for MRI-guided neurosurgery



Dr Ka-Wai Kwok of the Department of Mechanical Engineering of the University of Hong Kong (HKU) has recently secured HK\$8.5M funding (MRP/029/20X) for development of soft robotic assistant for magnetic resonance imaging (MRI)-guided stereotactic brain biopsy and neurosurgery from Innovation Technology Commission, via Midstream Research Programme (MRP).

...[Read more](#)

AWARDS

Professor Mingxin Huang won 2021 Xplorer Prize

Professor Mingxin Huang has been awarded the 2021 Xplorer Prize. Supported by Tencent, the award is presented to young scientists under the age of 45 who demonstrate exceptional quality and innovation in their field of research. This year, two of the three recipients from Hong Kong are from HKU. Professor Huang is highly acclaimed scholars with international recognition, and ranked by Clarivate Analytics in the top 1% worldwide. His research interests focus on the fundamentals of microstructure-property relationship and phase transformation of advanced steels and alloys...[Read more](#)



Professor Yuguo Li received Louise and Bill Holladay Distinguished Fellow Award by ASHRAE



Professor Yuguo Li, Chair Professor of Building Environment at the University of Hong Kong's Department of Mechanical Engineering, has been honored the Louise and Bill Holladay Distinguished Fellow Award 2021 by The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), in recognition of his contributions and pre-eminence in engineering and research work...[Read more](#)

HKU Faculty Outstanding Teaching Award 2019-2020

Congratulations to Dr Match WL Ko in receiving “Faculty Outstanding Teaching Award 2019-20 (Individual award)”.

The Outstanding Teaching Award (Individual Award) aims at rewarding and promoting excellence in teaching at the Faculty. This annual exercise recognize teachers who have demonstrated excellence in teaching and curriculum development...[Read more](#)



HKIE Trainee of the Year Award 2020



Congratulations to Mr. Ferris Poon, MSc(Eng)(ME) Year 2, in receiving “HKIE Trainee of the Year Award 2020 2nd Prize”.

HKIE Trainee of the Year Award is established by the HKIE to recognize Scheme “A” trainees with outstanding achievements and contribution to training, the HKIE, and the Hong Kong society. A maximum of three winners will be selected for their excellent performance in Scheme “A” training...[Read more](#)

ME students received awards from HKIE

The HKIE Innovation Award 2021 (Young Member Group)

Grand Prize (Category I - An Invention)

The "SNAPP" robotic fish currently holds the Guinness World Record for the fastest 50m swim by a robotic fish in 22.92s or at 2.18 m/s (meters per second). The robotic fish was invented by a team comprised of Muhammad Saad Shahid Anwel (President), Dr. F. Zhang (Supervisor) and other members. With their previous success, the team is now turning its goal to solve real-world problems such as data collection for marine exploration and pollution monitoring...[Read more](#)



The HKIE Entrepreneurs Award 2021 - Young Innovators

Champion:

Cheung Ho Chi won the champion for the project, Micro-hydropower system by domestic sewage in buildings.

This project is an idea to use the potential energy of domestic sewage to generate electricity. As skyscrapers are everywhere in Hong Kong, engineers can collect domestic sewage from each floor...[Read more](#)



1st runner up:

A team comprised of Leung Hoi Yan Macy, Wong Lut Sam Serena and Chan Yat Fung Ivan led by Prof. Dennis Leung won the 1st runner up for the project, A Solar Power System for Producing Useful Fuels and Chemicals from Waste Materials.

This project is to design an innovative solar power system with a solar tracking system and solar power supply system, which comprises the concepts of applying solar energy and waste-to-energy...[Read more](#)

Two ME teams won the InnoShow Award at the 4th Engineering InnoShow, HKU

Organised by Innovation Academy, the Engineering InnoShow were scheduled to be held at the end of each semester, and where students can showcase their innovative projects and achievements to their peers and public as a way of knowledge exchange and giving back to the society.

The forth Engineering InnoShow "All the flowers of all the tomorrows are in the seeds of today" showcased a number of innovative Engineering student projects at Tam Wing Fan Innovation Wing on May 4, 2021, where engineering students demonstrate their project to the judges. Two of the winning teams are from the Department of Mechanical Engineering, which are (1) A solar power system for producing useful fuels and chemicals from biomass waste and (2) Design and Modification of a Rototiller for the Grass/Sedge Control...[Read more](#)



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