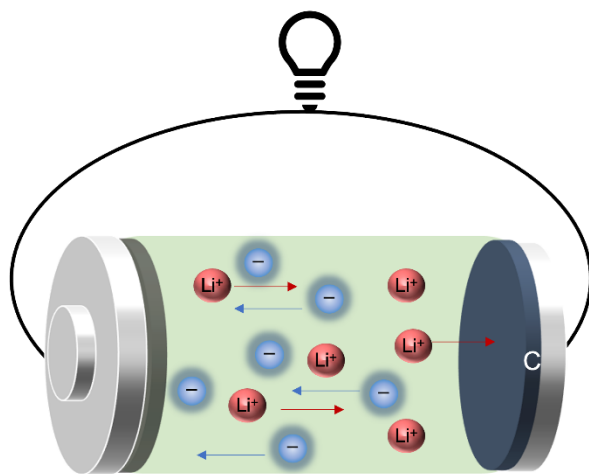




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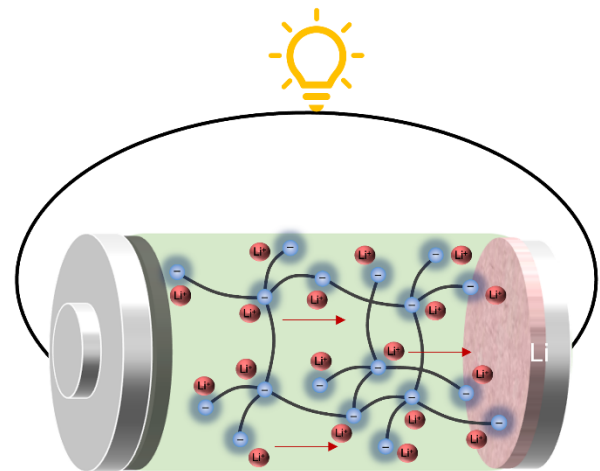
RESEARCH

ME researchers unlock the key to new generation of
safe energy-efficient Lithium battery



Liquid Electrolytes

- ❑ Dual-ion conductor
- ❑ Low ionic selectivity
- ❑ Limited cyclability
- ❑ Safety issues



Single-ion Polymer Electrolytes

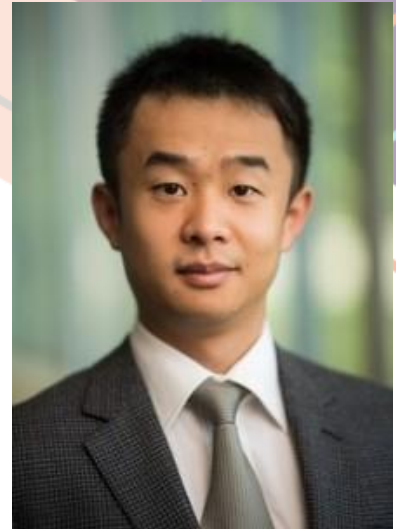
- ✓ Single-ion conductor
- ✓ High ionic selectivity
- ✓ Long cyclability
- ✓ High safety

A new generation of lithium-ion batteries developed by a team led by Dr Dong-Myeong Shin paves the way for a workable solution. The team has discovered a series of anionic network solid electrolytes that can form an integral part of the new battery, which is safer, higher in power density and has a longer life cycle.

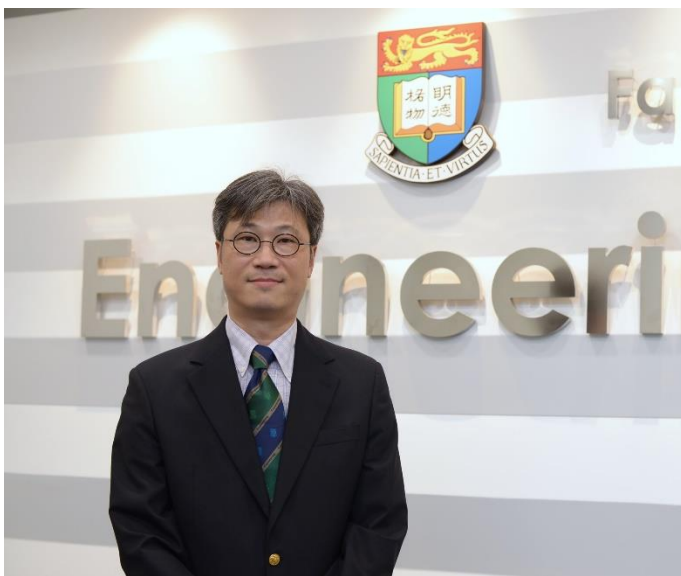
The findings have been published in the Chemical Engineering Journal in an article entitled "Engineered networking in a family of solvent-free single-ion conducting borate network polymer electrolytes for Li-metal battery applications"...[Read more](#)

Robust and Multifunctional Kirigami Electronics with Tough and Permeable Aramid Nanofiber Framework

Dr Lizhi Xu and his team had worked on the research for the topic "Robust and Multifunctional Kirigami Electronics with a Tough and Permeable Aramid Nanofiber Framework". The research was recently published by Advanced Materials on December 16, 2022 ...[Read more](#)



"A dual organelle-targeting mechanosensitive probe", a paper in Science Advances



Professor Alfonso H.W. Ngan and his team from Ming Wai Lau Centre for Reparative Medicine of Karolinska Institutet and Harbin Institute of Technology, Shenzhen had worked on the research for the topic "A dual organelle-targeting mechanosensitive probe". The research was recently published by Science Advances on January 11, 2023...[Read more](#)

"Multifunctional tendon-mimetic hydrogels", a paper in Science Advances

Dr Lizhi Xu and his team had worked on the research for the topic "Multifunctional tendon-mimetic hydrogels". The research was recently published by Science Advances on February 17, 2023...[Read more](#)



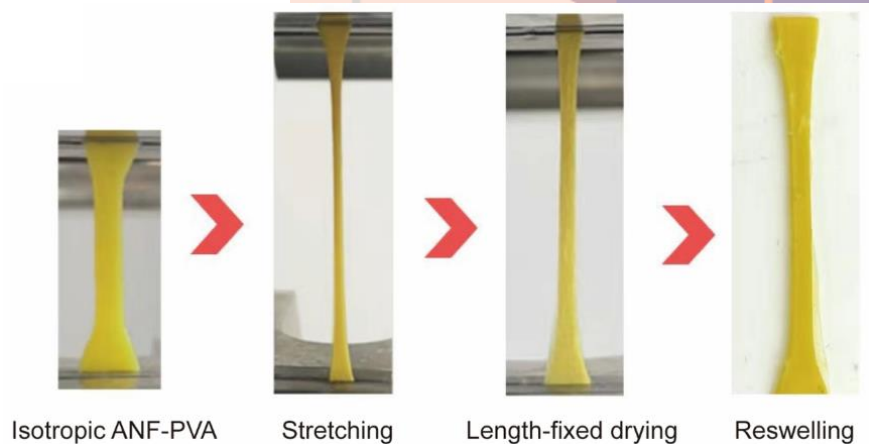
Multimaterial 3D printed self-locking thick-panel origami metamaterials



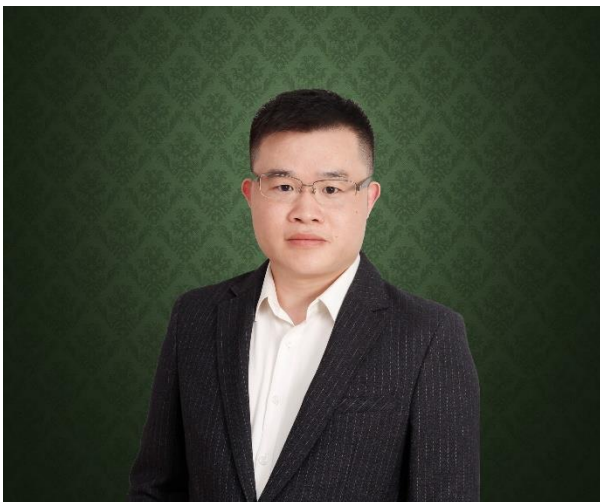
Professor Yang Lu and his collaborators reported their research on mechanical metamaterials and published a paper in Nature Communications on March 23, 2023 about "Multimaterial 3D printed self-locking thick-panel origami metamaterials"...[Read more](#)

HKU Mechanical Engineering team develops multifunctional tendon-mimetic hydrogels

A research team led by Dr Lizhi Xu of the has developed a new type of tendon-mimetic hydrogel with outstanding mechanical properties matching those of natural tendons combined with multifunctionalities for biomedical applications...[Read more](#)



A self-rotating, single-actuated UAV with extended sensor field of view for autonomous navigation



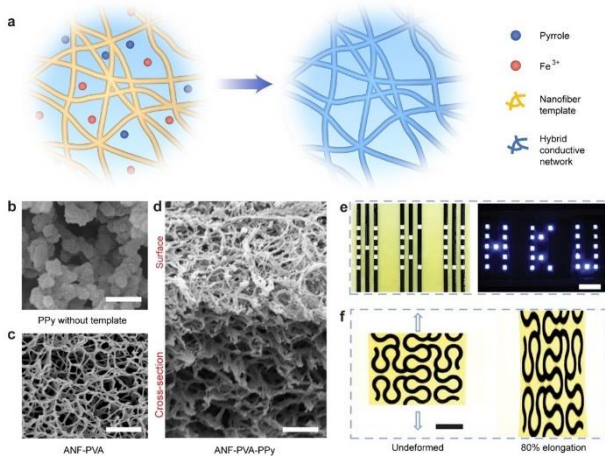
Dr Zhang Fu and his team had worked on the research for the topic "A self-rotating, single-actuated UAV with extended sensor field of view for autonomous navigation". The research was recently published by Science Robotics on March 15, 2023...[Read more](#)

3D architected thermoelectric devices with high toughness and power conversion efficiency

Professor Yang Lu and his collaborators had worked on the research for the topic “Three dimensional architected thermoelectric devices with high toughness and power conversion efficiency”. The research was recently published by Nature Communications on April 12, 2023...[Read more](#)



HKU Mechanical Engineering team develops electroconductive hydrogel for biomedical applications



A research team led by Dr Lizhi Xu has recently developed a new type of electroconductive hydrogels with outstanding mechanical strength and manufacturability, creating opportunities for the engineering of various bioelectronic devices.

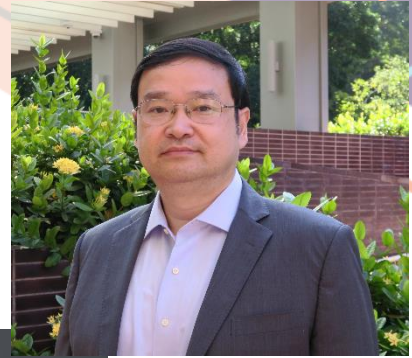
The innovation has been published in Nature Communications in an article entitled “Hybrid assembly of polymeric nanofiber network for robust and electronically conductive hydrogels”...[Read more](#)

AWARDS

The Hong Kong Jockey Club Charities Trust - JC STEM Lab

Professor Li Lain-Jong and Professor Xiaobo Yin received funding support from The Hong Kong Jockey Club Charities Trust (The Trust) to set up JC STEM Lab for research projects.

Working with the Government, non-governmental organisations (NGOs) and community partners, the Trust is committed to improving the quality of life of the people of Hong Kong. The Trust also proactively identifies and initiates projects that anticipate future community and social needs...[Read more](#)



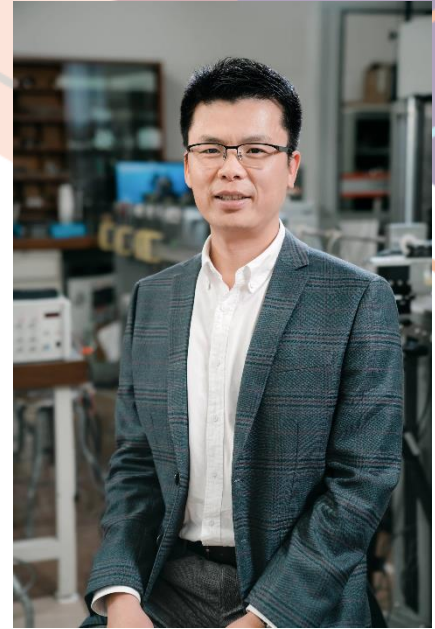
Fellows of Hong Kong Academy of Engineering Sciences



Professor Yuguo Li was selected as Fellows of Hong Kong Academy of Engineering Sciences (HKAES). Professor Li and Professor Shen were among the eight newly elected fellows of this year. HKAES is an organisation of Hong Kong's most eminent engineers of various disciplines who are recognised leaders of the profession with distinguished achievements in engineering sciences or applications... [Read more](#)

HKU Outstanding Researcher Award and Research Output Prize for 2021-2022

Prof. Mingxin Huang and Dr Ka-Wai Kwok received the HKU Outstanding Researcher Award and Research Output Prize for 2021-2022...[Read more](#)



ME students received the award of HKIE Environmental Division Final year Project Competition



Our graduates Mr. Chan Lok Kan, Mr. Chau Man Kit, Mr. Cheung Lam Hoi and Mr. Wong Tsz Kin who won the HKIE Environmental Division Prize for 2021-2022 Best Final-Year Environmental (Group) Project. Their project "Design and Fabrication of an Automatic Collection Device for Microplastic in Seawater" was a capstone project supervised by Prof. Dennis Y.C. Leung...[Read more](#)

Mechanical Engineering Best/ Outstanding Thesis Awards 2020-2021

Dr. Fang Ge and Dr. Li Wei, PhD graduates of Department of Mechanical Engineering have won the Best Thesis Awards 2020-2021.

Dr. He Shan, Dr. Pan Wending, PhD graduates and Miss Yan Wing Huen, MPhil graduate of Department of Mechanical Engineering have won the Outstanding Thesis Awards 2020-2021

The award is given on the basis of their thesis quality and comments from the internal and external examiners...[Read more](#)



2022 BMFA Design, build and fly competition



Two DBF teams of the ME department participated in the "British Model Flying Association (BMFA) 2022 University and Schools Flight Challenges", in which five challenges of different missions are available.

Among 17 teams from all over the world, including British, USA, HK ... etc., our DBF team #1 and #2 won the champion and the 1st runner up respectively...[Read more](#)

IMechE The Greater China Design Competition 2023

Mr. Vyshnav Shabu Nair (team leader) and Mr. Lu Hei Pang won the championship in the IMechE Greater China Design Competition 2023. They were from 2022 Sep to 2023 March to design and build an automatic line launcher.

The competition was arranged in the Innowing center of HKU for local participants and online with participants from mainland China. ...[Read more](#)



MSc(Eng) Alumnus Mr Ferris Poon won HKIE Young Engineers Scholarship



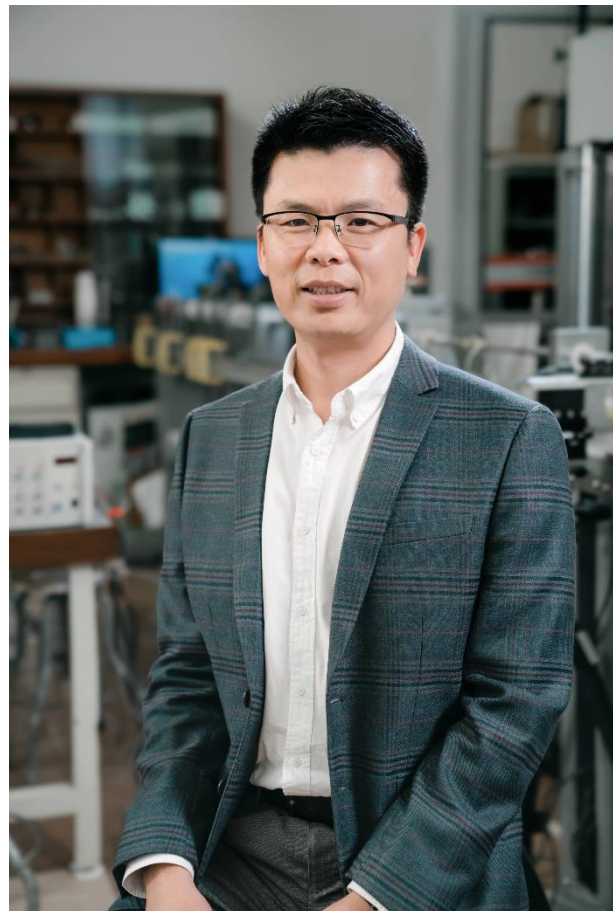
Our recent MSc(Eng) alumnus Mr Ferris Poon (CEng, MIMechE) has been selected as one of the scholarship awardees for his study in the Global MBA programme at Imperial College London (World #6 in QS Rankings 2023)...[Read more](#)

Department Head - Prof. M.X. Huang

Professor Mingxin Huang has taken on the role of Head of the Department of Mechanical Engineering starting from June 1, 2023, in addition to his position as Chair Professor of Materials Technology.

As we welcome Professor Huang, we would also like to express our sincere gratitude to Professor Dennis Leung for his outstanding leadership and valuable contributions to the Department during his tenure as Head over the past few years.

With a strong foundation in place, Professor Huang will propel the Department towards new heights of excellence in teaching, research and knowledge exchange. We are confident that under his leadership, the Department will continue to flourish and thrive...[Read more](#)



IMechE HKU Symposium

The Institute of Mechanical Engineers (Hong Kong Branch) co-organized a one-day symposium together with the Department of Mechanical Engineering on 10th March 2023 at the University of Hong Kong. The symposium, titled “Energy use, LNG, H2 and Waste Recycle Energy”, attracted more than 250 participants from the government sector, industries and academia...[Read more](#)



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