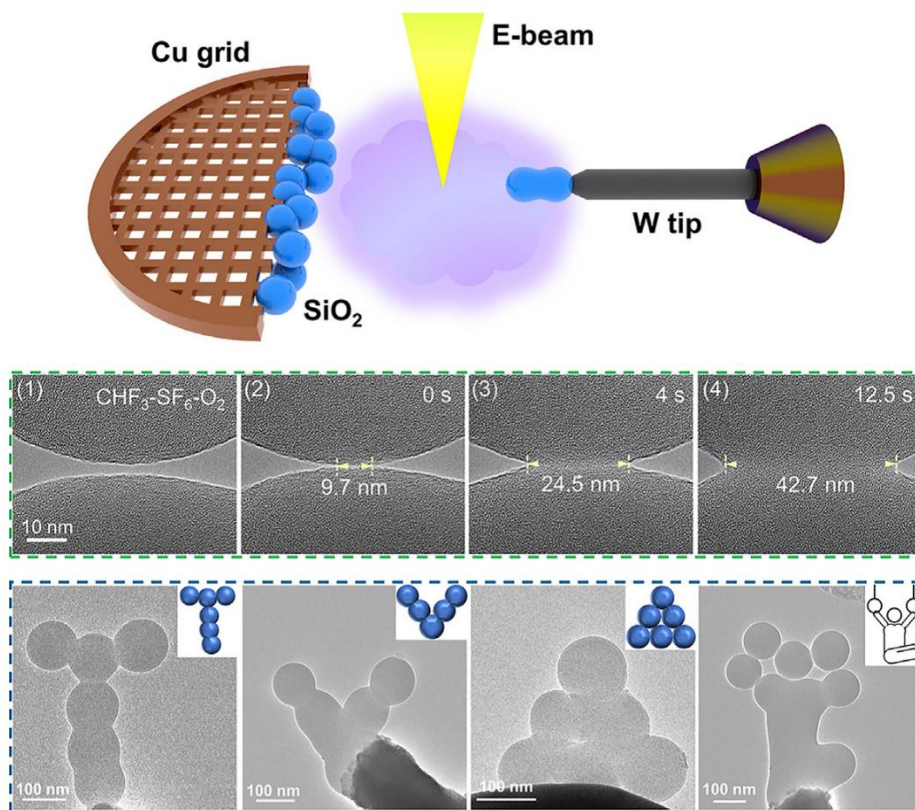




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RESEARCH

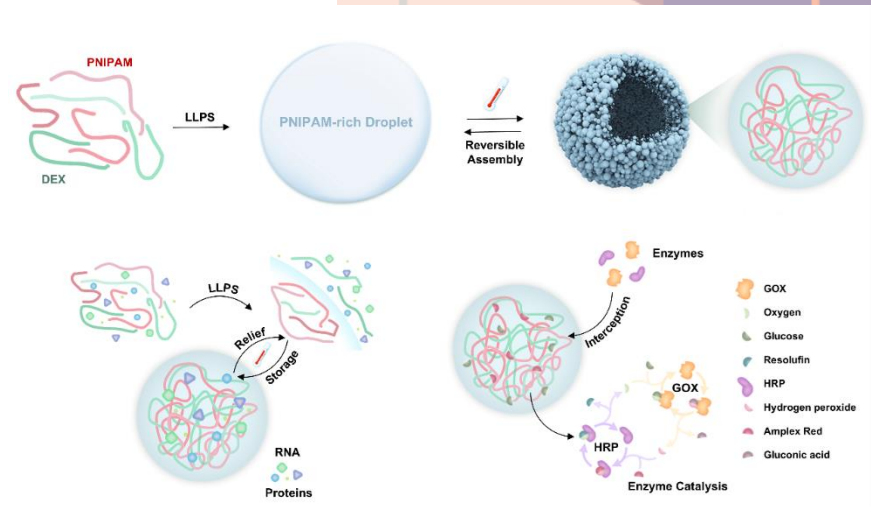
## Cold welding of silica nanoparticles for various glass 3D architectures and nano-devices



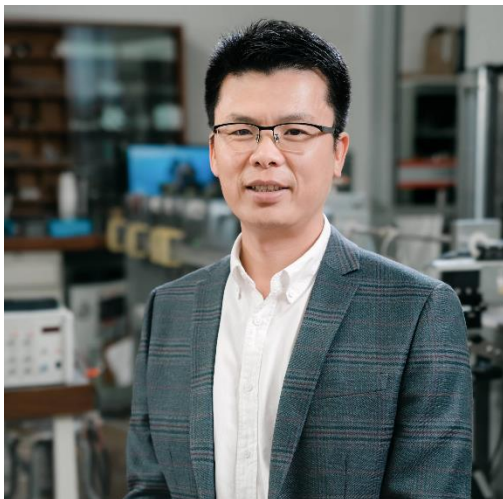
Professor Yang Lu and his collaborators successfully achieved "cold welding" (a solid-state welding process that requires no heat to join materials together) of silica glass nanoparticles. The welding process can be controlled in situ through adjusting the electron beam and gas environment and the welding quality is high enough for building high-definition glass three-dimensional (3D) micro/nano-architectures (see attached photo). This approach would potentially allow ultra-high resolution bottom-up assembly and 3D printing of silica nanostructures...[Read more](#)

## Thermo-responsive aqueous two-phase system for two-level compartmentalization

Professor Anderson H.C. Shum and his PhD student Huanqing Cui had worked on the research for the topic "Thermo-responsive aqueous two-phase system for two-level compartmentalization". The research is recently published by Nature Communications on August 8, 2024...[Read more](#)



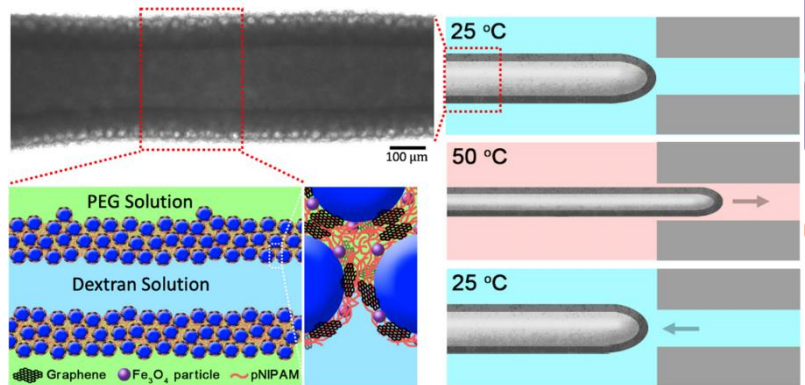
## "Borrowed dislocations for ductility in ceramics", a paper in Science



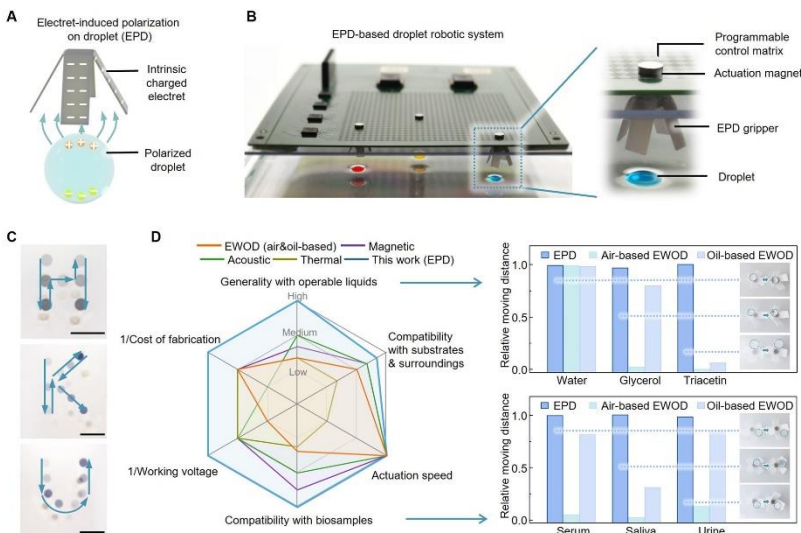
Professor Mingxin Huang and his team worked on the research for the topic "Borrowed dislocations for ductility in ceramics". The research findings were recently published in Science on July 25, 2024....[Read more](#)

## Responsive-Hydrogel Aquabots

Professor Anderson H.C. Shum and his team had collaborated with Prof. Thomas P Russell from Lawrence Berkeley National Laboratory on the research for the topic “Responsive-Hydrogel Aquabots”. The research is recently published by Advanced Science on July 29, 2024...[Read more](#)



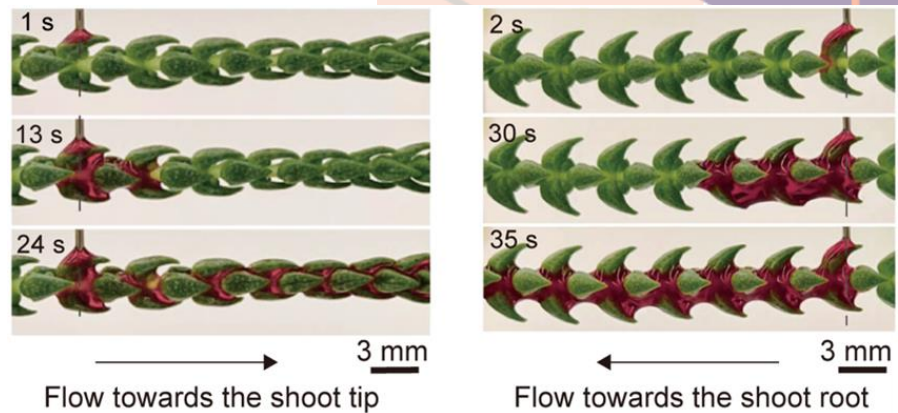
## A droplet robotic system enabled by electret-induced polarization on droplet



Professor Anderson H.C. Shum and his Microfluidics and Soft Matter Team worked on the research titled “A droplet robotic system enabled by electret-induced polarization on droplet”. The research was recently published by Nature Communications on July 23, 2024...[Read more](#)

## “Selective directional liquid transport on shoot surfaces of *Crassula muscosa*”, a paper in Science

A research team led by Professor Xiaobo Yin and Professor Liqiu Wang (The Hong Kong Polytechnic University) published a paper entitled “Selective directional liquid transport on shoot surfaces of *Crassula muscosa*” in Science on June 20, 2024...[Read more](#)



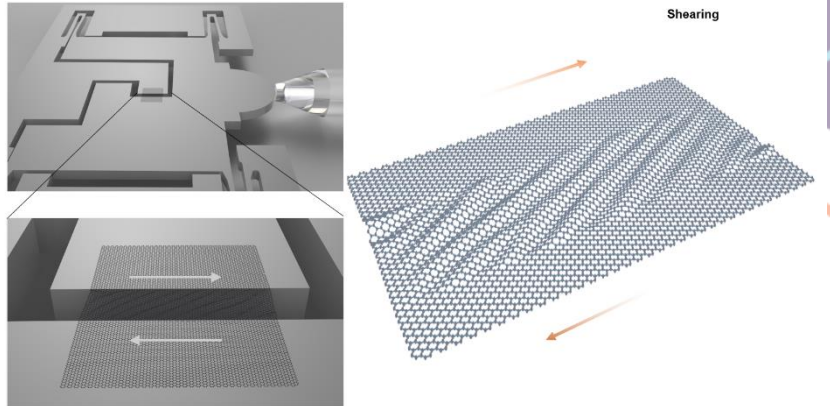
## Kirigami enabled reconfigurable three-dimensional evaporator arrays for dynamic solar tracking and high efficiency



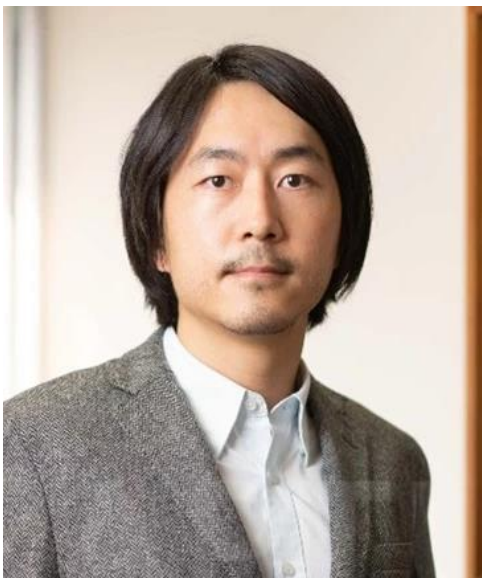
Professor Lizhi Xu and his team worked on the research for the topic “Kirigami enabled reconfigurable three-dimensional evaporator arrays for dynamic solar tracking and high efficiency desalination”. The research findings were recently published in Science Advances on June 26, 2024...[Read more](#)

## Tuning instability in suspended monolayer 2D materials

Professor Yang Lu's team achieved quantitatively tuning instability in suspended 2D materials including monolayer graphene and MoS<sub>2</sub> by employing a push-to-shear nanomechanical strategy. The tunable instability behavior of suspended monolayer 2D materials not only allows measuring their bending stiffness...[Read more](#)



## "Pushing thermal conductivity to its lower limit in crystals with simple structures", a paper in Nature Communications



Professor Yue Chen and his team worked on the research for the topic "Pushing thermal conductivity to its lower limit in crystals with simple structures". The research findings were recently published in Nature Communications on April 8, 2024...[Read more](#)

## AWARDS

### Prof. Min Wang has been named a Fellow of the American Ceramic Society (ACerS)

Professor Min Wang has been named a Fellow of the American Ceramic Society (ACerS). The election to ACerS Fellow is the recognition of individual member's outstanding contributions to the ceramic arts or sciences, broad and productive scholarship in ceramic science and technology, and outstanding service to the society... [Read more](#)



### Professor Anderson Shum received the 15th Guanghua Engineering Science and Technology Award



Congratulations to Professor Anderson H.C. Shum for receiving the 15th Guanghua Engineering Science and Technology Award from the Chinese Academy of Engineering in recognition of his significant achievements and contributions in the field of aqueous two-phase microfluidic system technology...[Read more](#)

## Prof. James Lam was elected as a Foreign Member of Academia Europaea (The Academy of Europe)

Congratulations to Professor James Lam for being elected as a Foreign Member of Academia Europaea (The Academy of Europe). He was elected under the section of Physics & Engineering Sciences for his contribution to control sciences. Professor Lam is one of only two elected Foreign Members in Asia in this section for the current year...[Read more](#)



## Prof. Min Wang is elected a Fellow of the Chinese Society for Biomaterials (CSBM)



Professor Min Wang has been elected a Fellow (FCSBM) of China's Chinese Society for Biomaterials (CSBM) in CSBM's inaugural fellow election conducted in 2023. FCSBM is the highest honor awarded to CSBM members in recognition of their outstanding contributions to the research and development of biomaterials, as well as to CSBM and its activities...[Read more](#)

## 49th International Exhibition of Inventions of Geneva

HKU triumphed at the 49th International Exhibition of Inventions of Geneva, winning a total of 42 awards, including two special grand prizes. Among the 42 awards, our department had bagged 8 of them...[Read more](#)



## Second place at the British Model Flying Association 2024 University and Schools Payload Challenges



Congratulations to our student teams, The Design, Build & Fly (DBF) for winning the Second Place at the British Model Flying Association 2024 University and Schools Payload Challenge. The competition was held by The British Model Flying Association in partnership with the Royal Aeronautical Society... [Read more](#)

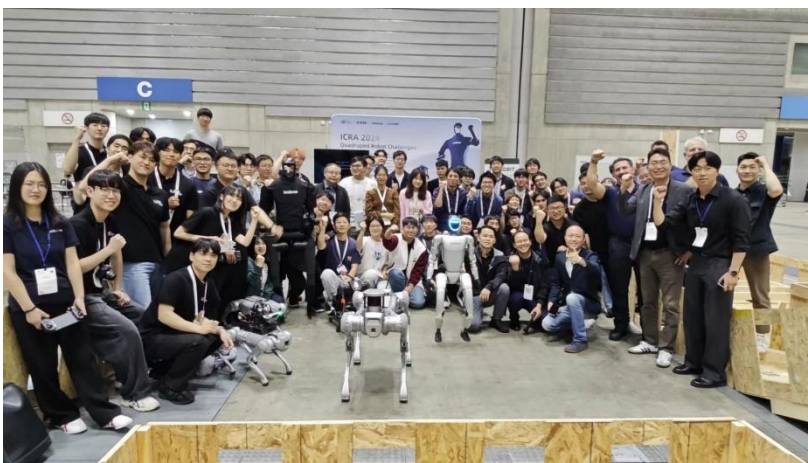


## EMSD Energy Saving Championship Scheme

Mr. Jiaming Zhou, a final-year PhD student from the Department of Mechanical Engineering, has bagged two prestigious awards in the Energy Saving Championship Scheme – Competition for Students. Guided by his supervisor, Professor Dong-Myeong Shin, the groundbreaking project entitled "Droplet-based triboelectric nanogenerator for energy harvesting in Hong Kong"...[Read more](#)



## IEEE RAS Quadraped Robot Challenges 2024



An Engineering student team won the Second Place in Tele-operation at the IEEE RAS Quadraped Robot Challenges 2024 organised by IEEE Robotics and Automation Society in May 2024. The competition focuses on advancing robotic technology in unstructured environments... [Read more](#)

## Design and manufacture Beach cleaning robot

This project was developed by four final year Mechanical Engineering students as the capstone project. The project was supervised by Dr M.M.Y. Choy, lecturer in the Department of Mechanical Engineering. The main objective of the project is to design and build a beach cleaning robot that can traverse and pick up rubbish from the beach. The machine is mechanically divided into two parts, the chassis and the trash intake and storage system. The tracked chassis provides mobility for the beach cleaning robot to traverse different terrain while the trash intake system can dig out rubbish from the sand and store it in the storage mechanism...[Read more](#)



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