

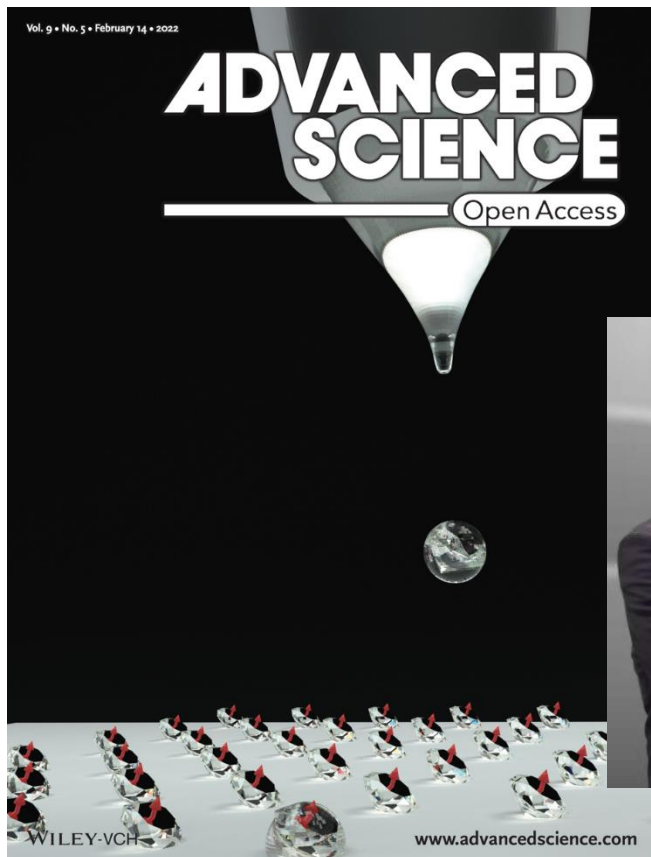


Department of
MECHANICAL ENGINEERING
The University of Hong Kong

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RESEARCH

Quantum-precision printing: HKU Engineering makes a breakthrough in the integration of diamond quant



Nanodiamonds hosting nitrogen-vacancy (NV) centers have emerged as a key element for quantum information processing, quantum computing, quantum optics, and quantum sensing. However, the fundamental and technological challenges associated with the placement of individual nanodiamonds on a circuit remains unresolved.

Collaborative research led by Dr. Ji Tae Kim (Mechanical Engineering) and by Dr. Zhiqin Chu (Electrical and Electronic Engineering) develops a quantum-precision nanoprinting method that can place NV centers directly on the substrate...[Read more](#)

“High- κ perovskite membranes as insulators for two-dimensional transistors”, a paper in Nature

Professor Lance Lain-Jong Li, Chair Professor of Department of Mechanical Engineering, had worked on a research for the topic “High- κ perovskite membranes as insulators for two-dimensional transistors”. The research has been published by Nature on May 11, 2022.

The scaling of silicon metal–oxide–semiconductor field-effect transistors has followed Moore’s law for decades, but the physical thinning of silicon at sub-ten-nanometre technology nodes introduces issues such as leakage currents1...[Read more](#)



“Plant-inspired TransOrigami microfluidics”, a paper in Science Advances



Professor Anderson Ho Cheung Shum, Associate Vice-President (Research and Innovation) and Professor of Department of Mechanical Engineering had worked on a research for the topic “Plant-inspired TransOrigami microfluidics”. The research has been published by Science Advances on May 4, 2022.

The healthy functioning of the plants’ vasculature depends on their ability to respond to environmental changes...[Read more](#)

HKU team developed a novel photonic chipscope for label-free monitoring of live cell

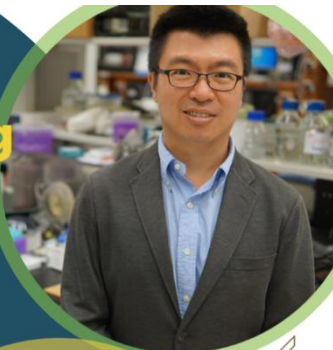
Dr Yuan Lin, Associate Professor of Department of Mechanical Engineering and Dr Zhiqin Chu, Assistant Professor of Department of Electrical & Electronic Engineering had worked on a research for the topic "A Versatile, Incubator-Compatible, Monolithic GaN Photonic Chipscope for Label-Free Monitoring of Live Cell Activities". The research has been published by Advanced Science on April 11, 2022...[Read more](#)



AWARDS

Recognition to Engineering scholars for excellence in research and teaching

**Outstanding
Researcher
Award**



**Research
Output
Prize**



HKU
EXCELLENCE
AWARDS
2021

Congratulations to Professor Anderson Shum and Professor Mingxin Huang for their outstanding achievements in research and teaching!

The University of Hong Kong believes that the talent and expertise of our academics are priceless assets. Every year, outstanding colleagues are presented with University teaching, research and knowledge exchange awards for excellence and impact in their fields...[Read more](#)

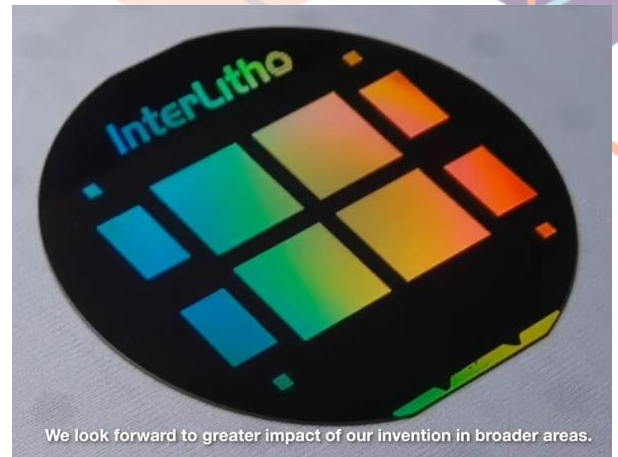
ME research teams won two awards at the Special Edition 2022 Inventions Geneva Evaluation Days

ME's award-winning inventions in 2022:

Gold Medal

Fast-reconfigurable large-area interference lithography nanopatterning platform

This novel nanolithography technology is capable of reducing the processing time and cost of large-area nanopatterning by more than 10 times when compared with the best electron beam writers. It adopts fast-reconfigurable beam delivery, active phase stabilization...[Read more](#)



Silver Medal

Anti-Covid-19 stainless steel

This is the first anti-Covid-19 stainless steel with Cu-rich precipitates permanently present in the SS matrix with a long-term anti-Covid property, which can inactivate SARS-Cov-2 on stainless steel surfaces. This new invention not only help fight against the COVID-19 pandemic...[Read more](#)

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