SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

Weekly Discovery

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25 - 29 APRIL 2022

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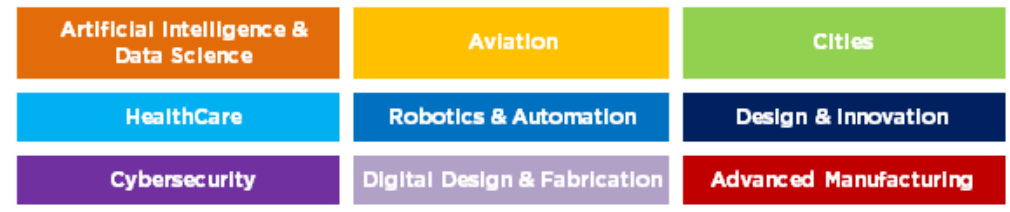
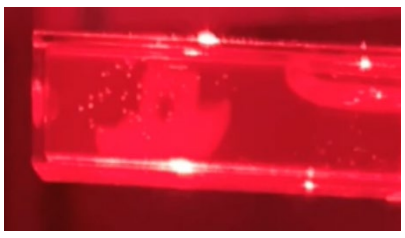


3D PRINTING

Making 3D Printing Truly 3D

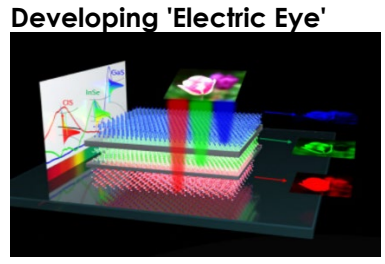


"Researchers describe a technique of volumetric 3D printing that goes beyond the bottom-up, layered approach. The process eliminates the need for support structures because the resin it creates is self-supporting."

Source: Harvard University (20 April 2022)

AI

Researchers Take Step Toward Developing 'Electric Eye'



"Georgia State University researchers have successfully designed a new type of artificial vision device that incorporates a novel vertical stacking architecture and allows for greater depth of color recognition and scalability on a micro-level. The new research is published in the top journal ACS Nano."

Source: Georgia State University (18 April 2022)

AI

This Algorithm Has Opinions About Your Face

"Researchers at Stevens Institute of Technology, in collaboration with Princeton University and University of Chicago, have now taught an AI algorithm to model these first impressions and accurately predict how people will be perceived based on a photograph of their face."

Source: Stevens Institute of Technology (21 April 2022)

ARCHITECTURE

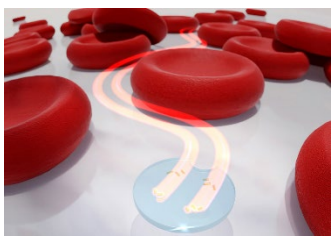
Fifty Architects and Designers You Need to Know on Earth Day

"Architects and designers have a key role to play in reducing carbon emissions, pollution and waste while protecting biodiversity.
Here are 50 individuals and studios who are doing pioneering work, ranging from architects exploring timber construction to designers thinking radically about circularity and scientists developing new low-carbon materials."

Source: Dezeen (22 April 2022)

DRONES

Microdrones With Light-driven Nanomotors



"Propelling micrometre-sized drones using light only and exerting precise control: Physicists at the University of Würzburg have succeeded at this for the first time. Their microdrones are significantly smaller than red blood cells."

Source: University of Würzburg (21 April 2022)

HEALTHCARE

New Miniature Heart Could Help Speed Heart Disease Cures

"Now, an interdisciplinary team of engineers, biologists, and geneticists has developed a new way of studying the heart: they've built a miniature replica of a heart chamber from a combination of nanoengineered parts and human heart tissue. There are no springs or external power sources—like the real thing, it just beats by itself, driven by the live heart tissue grown from stem cells."

Source: Boston University (22 April 2022)

HEALTH TECH

Automated Nutrition App Can Help Healthier Diet

"A paper published in the Journal of Medical Internet Research today (Mon 25 April 22) shows how the eNutri app developed by researchers in human nutrition and biomedical engineering at the University of Reading helped people to eat more healthily. Participants who were given automated personalised nutrition advice improved their healthy diet score by 6% compared to a control group who were given general healthy eating guidance."

Source: University of Reading (25 April 2022)

HEALTH TECH

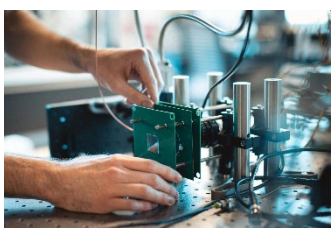
Wireless Device to Provide New Options or Colorectal Cancer Treatment

"A Texas A&M team is developing an intracavity device that will allow doctors to eliminate leftover cancer cells during surgery, reducing the need for additional treatments such as chemotherapy."

Source: Texas A & M (25 April 2022)

LIDAR

New Lidar System Promises 3D Vision for Cameras, Cars, and Bots



"Now researchers at Stanford University have developed an innovative system that can integrate with almost any mass-produced CMOS image sensor to capture 3D data at potentially a fraction of the price of today's lidars. It relies on the piezoelectric effect, the process by which deforming some materials generates electricity, and vice versa."

Source: IEEE Spectrum (21 April 2022)

MATERIAL SCIENCE

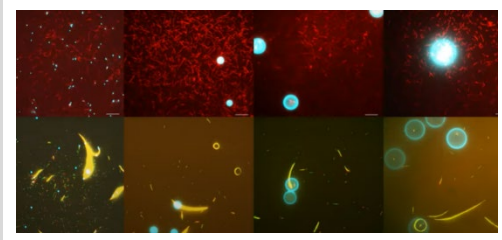
New Process Enables 3D Printing of Small and Complex Components Made Of Glass In Just A Few Minutes

"Scientists combine materials science invention with newly developed 3D printing technology. Components made of highly transparent glass can be manufactured in just a few minutes and with great geometric freedom."

Source: University of Freiburg (19 April 2022)

ROBOTICS

Molecular Robots Work Cooperatively in Swarms

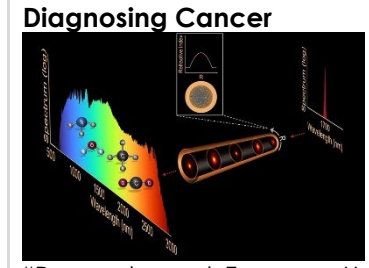


"In a global first, scientists have demonstrated that molecular robots are able to accomplish cargo delivery by employing a strategy of swarming, achieving a transport efficiency five times greater than that of single robots."

Source: Hokkaido University (21 April 2022)

SENSOR

New Self-Cleaning Optical Fiber Can Help in Monitoring Environment and Diagnosing Cancer



"Researchers at Tampere University have successfully developed a novel optical fiber design allowing the generation of rainbow laser light in the molecular fingerprint electromagnetic region. This new optical fiber with a self-cleaned beam can help in developing applications to, for example, tagging pollutants, cancer diagnostics, environmental monitoring, and food control."

Source: Tampere University (21 April 2022)

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