SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

Weekly Discovery

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23 MARCH 2020 - 27 MARCH 2020

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ARCHITECTURE

How the COVID-19 Pandemic Will Change the Built Environment

"For many in the design community, however, the rapid spread of COVID-19 has caused them to reevaluate their life's work, especially when it comes to how we gather in and use large public spaces, like airports, hotels, hospitals, gyms, and offices."

Source: Architectural Digest (18 March 2020)

ARCHITECTURE

MVRDV Wins Competition to Design the Mixed-Use Shimao ShenKong International Center in Shenzhen, China

"Designed by MVRDV for Shimao Group in partnership with landscape designers Openfabric, Shenzhen Terraces will act as "a new three-dimensional urban living room with more than 20 programs, including a small gallery, library, and outdoor theatre"."

Source: Arch Daily (23 March 2020)

ANIMATION

Viral animations explaining the importance of social distancing show how "effective design can explain things" during coronavirus pandemic

"Morris and Wiles hope their collaboration will help communicate the impact that social distancing can have on slowing the spread of the disease while offering clarity in a time of panic and confusion."

Source: Dezeen (22 March 2020)

ARTIFICAL INTELLIGENCE

Intel's Neuromorphic Nose Learns Scents in Just One Sniff

"Intel Labs' Nabil Imam holds a Loihi neuromorphic test chip. The team is building algorithms on computer chips to mimic what happens in your brain's neural network when you smell something." Read more.

Source: IEEE Spectrum (16 March 2020)

BLOCKCHAIN

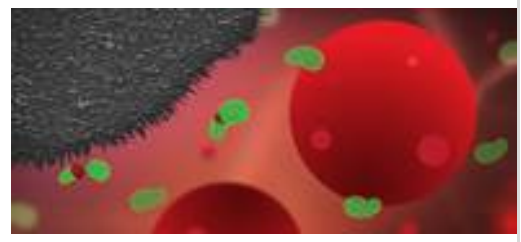
Five Ways Blockchain Can Unblock The Coronavirus Medical Supply Chain

"Companies in the US are converting supply chains to manufacture critical supplies such as personal protective equipment, COVID-19 Test Kits and ventilators. New open source movements are stepping up around the world to try address growing ventilator shortages."

Source: Forbes (22 March 2020)

BIOLOGICAL ENGINEERING

Graphite nanoplatelets prevent infections



"The purpose of our research is to develop antibacterial surfaces. We have now shown that tailored surfaces formed of a mixture of polyethylene and graphite nanoplatelets can kill 99.99 per cent of bacteria which try to attach to the surface,"

Source: Chalmers University of Technology (24 March 2020)

BIOMEDICAL DEVICE

Millimetre-scale transceiver boosts ingestible sensors

"The transceiver is 1/30th the size of today's state-of-the-art systems and could be used in a broad range of so-called "ingestibles" – sensors that monitor health conditions from inside the human body."

Source: Physics World (19 March 2020)

COVID-19

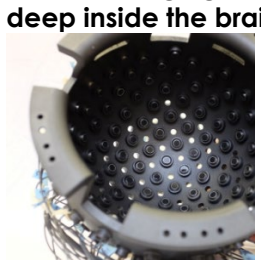
Working from home because of COVID-19? Here are 10 ways to spend your time

"As the COVID-19 pandemic sweeps the world, for those free of illness and related burdens, and stuck at home, what do you do with your time? Here are some ideas for scientists who suddenly find themselves working from home."

Source: Science (16 March 2020)

DIAGNOSTIC IMAGING

Seismic imaging technology sees deep inside the brain

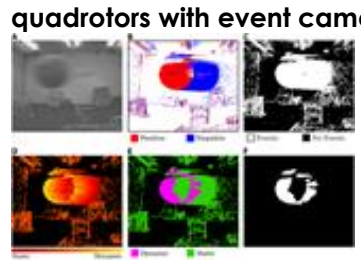


"A computational technique developed to process seismic images of the Earth's subsurface could allow for high-resolution human brain imaging, reports a new study by researchers from Imperial College London."

Source: Physics World (17 March 2020)

DRONES

Dynamic obstacle avoidance for quadrotors with event cameras



"To safely avoid fast moving objects, drones need low-latency sensors and algorithms. We departed from state-of-the-art approaches by using event cameras, which are bioinspired sensors with reaction times of microseconds."

Source: Science (18 March 2020)

ELECTRONICS

Stretchable Supercapacitors to Power Tomorrow's Wearable Devices

"Researchers have engineered a novel type of supercapacitor that remains fully functional even when stretched to eight times its original size."

Source: Duke University (19 March 2020)

EMERGING TECH

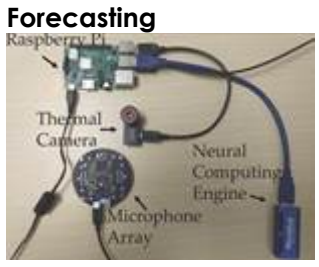
AI-Enabled Tech Could Soon Help the TSA Pinpoint Biohazards

"A computational technique developed to process seismic images of the Earth's subsurface could allow for high-resolution human brain imaging, reports a new study by researchers from Imperial College London."

Source: Physics World (17 March 2020)

HEALTHCARE

Portable AI Device Turns Coughing Sounds Into Health Data for Flu Forecasting



"University of Massachusetts Amherst researchers have invented a portable surveillance device powered by machine learning - called FluSense - which can detect coughing and crowd size in real time, then analyze the data to directly monitor flu-like illnesses trends. "

Source: University of Massachusetts Amherst (19 March 2020)

OPTICS

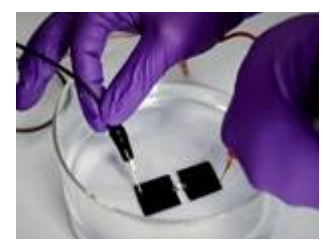
Ultrathin but fully packaged high-resolution camera

"A research group have made an ultracompact camera that captures high-contrast and high-resolution images. The camera boasts a total track length of 740 µm and a field of view of 73°."

Source: EUREKALERT (23 March 2020)

POLYMERS

How to Get Conductive Gels to Stick When Wet



"A new way of making polymers adhere to surfaces may enable better biomedical sensors and implants."

Source: MIT News (20 March 2020)

ROBOTICS

Soft Robot, Unplugged

"It's balloon art on steroids: a pneumatic, shape-changing soft robot capable of navigating its environment without requiring a tether to a stationary power source."

Source: UC Santa Barbara (18 March 2020)

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