SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

Weekly Discovery

We SHARE to inspire and ignite ideas!

22 June – 26 June 2020

The Library publishes **9 alerts** focusing on Topics relevant to **growth and research areas** to SUTD.

Stay up to date by **subscribing** to any of these **9 Topical Reports** - CLICK HERE TO SUBSCRIBE NOW

Artificial Intelligence & Data Science	Aviation	Cities
HealthCare	Robotics & Automation	Design & Innovation
Cybersecurity	Digital Design & Fabrication	Advanced Manufacturing

AI

Responsible AI Is Even More Essential During A Crisis

"As governments, businesses and organizations, and workers figure out how to operate in the new normal brought on by COVID-19, technology, big data, and artificial intelligence are playing an important role. Some governments are deploying contact-tracing technologies, including app-based tracking and facial recognition, to identify those who may be at risk of infection and to keep others at a distance."

Source: Strategy Business (16 June 2020)

ARCHITECTURE

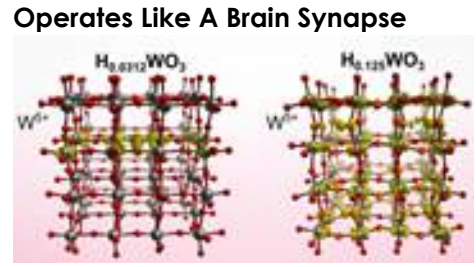
Goldsmith Unveils Design For Urban Floating Chicken Farm In Rotterdam

"Architecture studio Goldsmith has revealed the design for its floating chicken and cress farm, which is set to be built alongside its existing waterborne dairy farm in Rotterdam, the Netherlands. Named Floating Farm Poultry, the building is an evolution of Goldsmith's previous floating dairy farm and shares many of the same ideals of placing farming in the city, near to buyers."

Source: Dezeen (22 June 2020)

ARTIFICIAL INTELLIGENCE

Engineers Design A Device That Operates Like A Brain Synapse

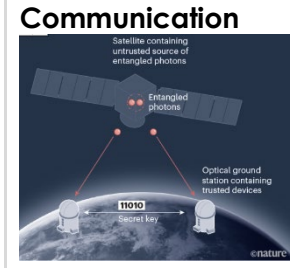


"A new system developed at MIT and Brookhaven National Lab could provide a faster, more reliable and much more energy efficient approach to physical neural networks, by using analog ionic-electronic devices to mimic synapses."

Source: MIT News (19 June 2020)

CRYPTOGRAPHY

A Step Closer To Secure Global Communication



"The authors' meticulous optimization also involved cutting-edge signal acquisition, pointing and tracking systems and synchronization techniques for both the satellite and the ground stations."

Source: Nature (Jun 22 2020)

DEVICES

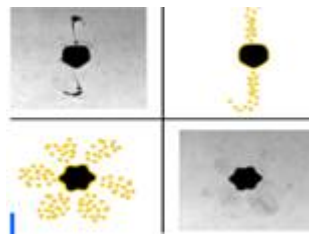
Neopenda Neoguard Wearable Vital Signs Monitor For COVID-19: Interview With Sona Shah And Assumpta Nantume

"The wearable wirelessly streams vital signs, such as respiration rate, to a phone or tablet computer, allowing healthcare staff to monitor newborns on the move or remotely."

Source: Medgadget (17 Jun 2020)

DRUG DELIVERY

Microbubbles Controlled By Acoustical Tweezers For Highly Localized Drug Release

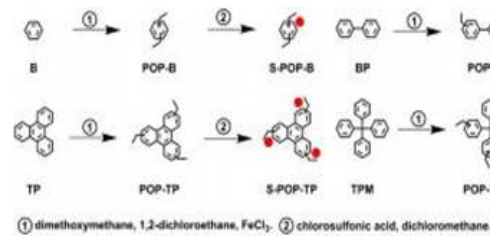


"… the scientists have opened the way for a broader application of acoustical tweezers in biology and biomedicine, for instance for the highly-localized, reproducible, and controlled delivery of medicine, or for in vitro tissue engineering using stem cells." Full paper

Source: EurekAlert! (22 Jun 2020)

FUEL CELL

Simple Is Best? Simple And Universal Design For Fuel Cell Electrolyte



" Development of new materials for cost-effective technologies is urgent and necessary to bring about an environmentally sustainable society. Polymer electrolyte fuel cells have high expectations for a clean energy system that can support environmental protection."

Source: Eurekalert! (18 June 2020)

INNOVATION

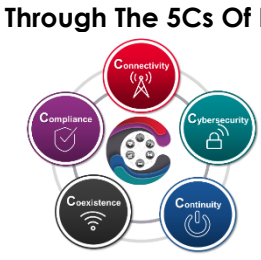
Innovators Under 35 2020

"Meet this year's 35 brilliant young entrepreneurs, inventors, visionaries, humanitarians and pioneers who are working to make the world a better place."

Source: MIT Technology Review (17 June 2020)

IOT

Unleash Innovation In Iot Applications – Exploring Top Five Challenges Through The 5Cs Of Iot



"Product designers who integrate sensing, processing, control and communication components into the final product, must know how the peripherals behave and consume power, and optimize the product's firmware and software to simplify operation and reduce power consumption."

Source :TechGoondu (Jun 23 2020)

MEDICAL ENGINEERING

Super-Strong Surgical Tape Detaches On Demand

"Removable adhesive could make it easier for surgeons to close up internal wounds."

Source: MIT News (22 Jun 2020)

MOLECULAR ROBOTS

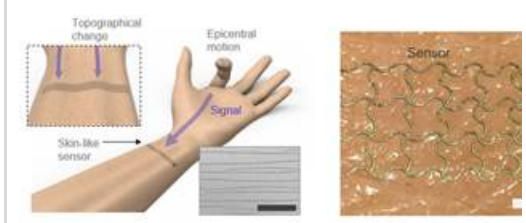
Let The Robot Swarms Begin!

"Scientists have made huge moving 'swarms' of these molecular robots by utilizing DNA's ability to transmit and receive information to coordinate interactions between individual robots."

Source: Technology.Org (19 June 2020)

SENSOR

A Deep-Learned E-Skin Decodes Complex Human Motion

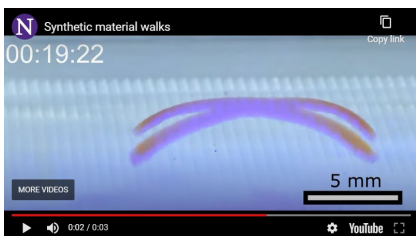


"The research team design this new measuring system that extracts signals corresponding to multiple finger motions by generating cracks in metal nanoparticle films using laser technology. The sensor patch was then attached to a user's wrist to detect the movement of the fingers."

Source: KAIST (18 June 2020)

SOFT ROBOTICS

Synthetic Materials Mimic Living Creatures



"Northwestern University researchers have developed a family of soft materials that imitates living creatures. When hit with light, the film-thin materials come alive — bending, rotating and even crawling on surfaces. "

Source: North Western Universtiy (22 June 2020)

SUSTAINABILITY

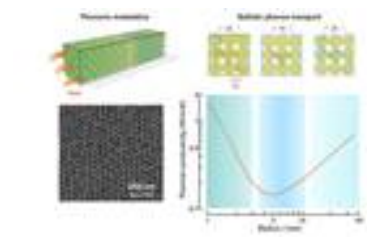
Pandemic An Opportunity To "Accelerate The Shift" Towards Circular Economy Says IKEA Head Of Circular Design

"Nordin believes that the coronavirus pandemic has highlighted the need to move away from linear design to a circular economy as it has made people more aware of the need for products to have longevity."

Source :Dezeen(Jun 18 2020)

THERMAL CONDUCTIVITY

Design Method May Boost Semiconductor Performance By Better Handling Heat



"A team of Penn State researchers report that a fabrication technique may offer a path toward mastering the often chaotic flow of heat carriers at the nanoscale in silicon and other semiconductors. The study could be another step toward understanding how to control heat flow through silicon semiconductors and possibly improving the performance of those chips. Read more in ACS."

Source: Penn State University (22 June 2020)

URBANIZATION

Smog-Forming Particles May Grow Quickly In Supersaturated Urban Air

"They found that gaseous nitric acid and ammonia, at temperatures and vapor pressures typical in winter months at many locations, condense into ammonium nitrate particles that grow large enough to survive in a saturated atmosphere."

Source: Physics Today (Jun 18 2020)

To view past Weekly Alerts CLICK HERE

For more articles or in-depth research, contact us at library@sutd.edu.sg