Weekly Discovery

We SHARE to inspire and ignite ideas!

16 - 20 May 2022

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

AERODYNAMICS

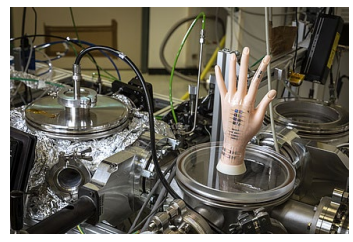
Aerodynamics Of Perching Birds Could Inform Aircraft Design

"If you have ever watched a bird land on a tree branch, you may have noticed that it rapidly pitches its wings upward at a high angle to execute a smooth landing. However, for some birds, they land by folding their wings as they perch instead, creating a sweeping motion as they decelerate."

Source: UNIVERSITY OF CENTRAL FLORIDA (17 May 2022)

AI

Electronic Skin: Physicist Develops Multisensory Hybrid Material



"The "smart skin" developed by Anna Maria Coclite is very similar to human skin. It senses pressure, humidity and temperature simultaneously and produces electronic signals. More sensitive robots or more intelligent prostheses are thus conceivable."

Source: Graz University of Technology (16 May 2022)

DRONES

Maple Seeds Inspire Efficient Spinning Microdrone

"In a paper published this week in Science Robotics, researchers from the City University of Hong Kong have come up with a drone inspired by maple seeds that weighs less than 50 grams but can hold a stable hover for over 24 minutes."

Source: IEEE Spectrum (13 May 2022)

ARCHITECTURE

UK Net Zero Carbon Buildings Standard to "address current ambiguities around the much-used term"

"A group of leading industry organisations including the Royal British Institute of Architects have come together to create a building standard that will verify net-zero carbon buildings in the UK."

Source: Dezeen (13 May 2022)

AUTOMATION

Automating Road Maintenance With LiDAR Technology

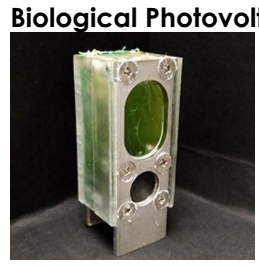
"rom advanced manufacturing to automated vehicles, engineers are using LiDAR to change the world as we know it. For the second year, students from across the country submitted projects to SICK's annual TiM$10K Challenge.

The first place team during the 2020 TiM$10K Challenge hails from Worcester Polytechnic Institute (WPI) in Worcester."

Source: Spectrum IEEE (04 May 2022)

COMPUTING

Algae-Powered Computing: Scientists Create Reliable And Renewable Biological Photovoltaic Cell



"Researchers have used a widespread species of blue-green algae to power a microprocessor continuously for a year -- and counting -- using nothing but ambient light and water. Their system has potential as a reliable and renewable way to power small devices."

Source: University of Cambridge (12 May 2022)

DESIGN

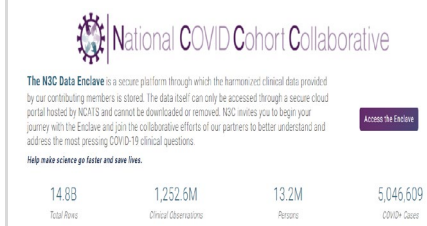
Microsoft Reinvents The Mouse For People With Disabilities

"The mouse looks tiny. It's a small square, reminiscent of one of those novelty mice sold to people who refuse to use the trackpad on their computer. It has two buttons and a scroll wheel, and when Microsoft claims that this new mouse has been designed alongside people with disabilities,"

Source: Fast Company (17 May 2022)

HEALTHCARE

Scientists Identify Characteristics To Better Define Long COVID



"A research team supported by the National Institutes of Health has identified characteristics of people with long COVID and those likely to have it. Scientists, using machine learning techniques, analyzed an unprecedented collection of electronic health records (EHRs) available for COVID-19 research to better identify who has long COVID."

Source: Eurekalert (16 May 2022)

MATERIALS

Newly Discovered Enzyme Breaks Down PET Plastic In Record Time

"One way in which enzymes are used in nature is by bacteria to decompose plant parts. It has been known for some time that some enzymes, so-called polyester-cleaving hydrolases, can also degrade PET. For example, the enzyme LCC, which was discovered in Japan in 2012, is considered to be a particularly effective "plastic eater"."

Source: Eurekalert! (16 May 2022)

MATERIALS

Researchers Develop 3D-Printed Shape Memory Alloy With Superior Superelasticity

"Researchers from Texas A&M University recently showcased superior tensile superelasticity by fabricating a shape memory alloy through laser powder bed fusion, nearly doubling the maximum superelasticity reported in literature for 3D printing."

Source: Texas A&M University (13 May 2022)

MEDTECH

Smart Pacifier Developed To Monitor Infant Health In The Hospital

"A wireless, bioelectronic pacifier could eliminate the need for invasive, twice-daily blood draws to monitor babies' electrolytes in Newborn Intensive Care Units or NICUs.
This smart pacifier can also provide more continuous monitoring of sodium and potassium ion levels. These electrolytes help alert caregivers if babies are dehydrated, a danger for infants, especially those born prematurely or with other health issues."

Source: Washington State University (16 May 2022)

PHYSICS

Dragonflies Use Vision, Subtle Wing Control To Straighten Up And Fly Right

"The combination of kinematic analysis, physical modeling and 3D flight simulations now gives researchers a noninvasive way to infer the crucial connections between an animal's observed behaviors and the internal procedures that control them…to improve the performance of small flying machines and robots."

Source: Cornell University (13 May 2022)