Weekly Discovery

We SHARE to inspire and ignite ideas!

27 MAY 2019 - 31 MAY 2019

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

ARTIFICIAL INTELLIGENCE

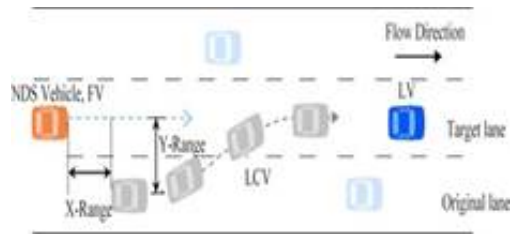
This Animated Mona Lisa Was Created by AI, and It Is Terrifying

"Researchers trained the algorithm to understand facial features' general shapes and how they behave relative to each other, and then to apply that information to still images."

Source: Live Science (27 May 2019)

AUTONOMOUS VECHICLES

Examining Lane Change Gap Acceptance, Duration and Impact Using Naturalistic Driving Data



"This study developed an automatic extraction algorithm to retrieve 5339 lane change events from the Shanghai Naturalistic Driving Study, and used the data to examine the core lane change components: gap acceptance, duration, and impact on the following vehicle (FV)."

Source: Transportation Research Part C: Emerging Technologies (July 2019)

AUTONOMOUS VECHICLES

Test Your Self-Driving Algorithm: An Overview of Publicly Available Driving Datasets and Virtual Testing Environments

"Many companies aim for delivering systems for autonomous driving reaching out for SAE Level 5. As these systems run much more complex software than typical premium cars of today ..."

Source: IEEE Transactions on Intelligent Vehicles (June 2019)

DIGITAL FABRICATION

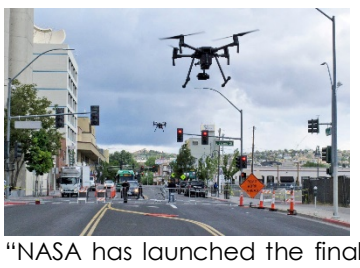
Designer and Engineer Nassia Inglessis Creates Responsive Canopy

"Urban Imprint invites visitors to move all over a field of brick-red, water-jet-cut rubber-concrete composite tiles that sinks slightly underneath one's feet, in turn deforming a hidden web of laser-cut steel below."

Source: The Architect's Newspaper (23 May 2019)

DRONES

NASA's First-of-Kind Tests Look to Manage Drones in Cities

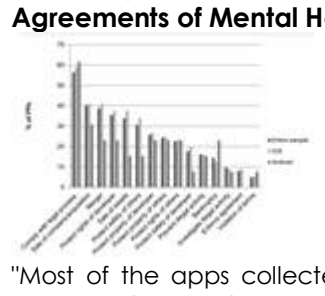


"NASA has launched the final stage of a four-year effort to develop a national traffic management system for drones, testing them in cities for the first time beyond the operator's line of sight as businesses look in the future to unleash the unmanned devices in droves above busy streets and buildings."

Source: The Washington Post (24 May 2019)

HEALTH APPS

Availability, Readability, and Content of Privacy Policies and Terms of Agreements of Mental Health Apps

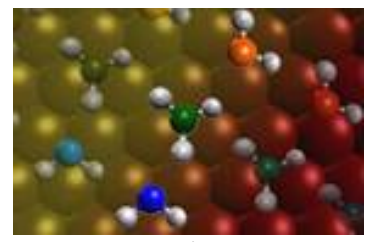


"Most of the apps collected in the initial sample did not include a PP or ToA despite this being a requirement by the store."

Source: Internet Interventions (September 2019)

MATERIALS SCIENCE

Energy Researchers Break the Catalytic Speed Limit



"Researchers discovered new technology that can speed up chemical reactions 10,000 times faster than the current reaction rate limit. These findings could increase the speed and lower the cost of thousands of chemical processes used in developing fertilizers, foods, fuels, plastics, and more."

Source: Phys.org (28 May 2019)

MATERIALS SCIENCE

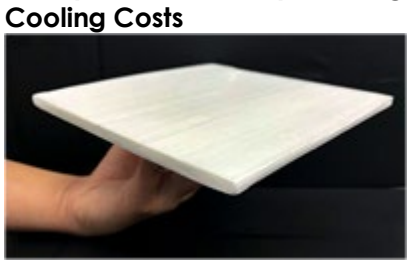
Origami-Inspired Materials Could Soften the Blow for Reusable Spacecraft

"University of Washington researchers have developed a novel solution to help reduce impact forces using a paper model of a metamaterial that uses 'folding creases' to soften impact forces and instead promote forces that relax stresses in the chain."

Source: University of Washington (24 May 2019)

NEW MATERIAL

This Engineered Wood Radiates Heat into Space, Potentially Slashing Cooling Costs

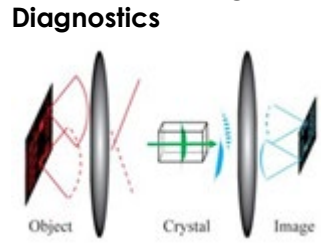


"Now, a new type of wood that radiates heat into space could offer some relief. If used on a building's exterior, such as in siding and roofs, the material could drop a building's temperature as much as 10°C and reduce cooling costs as much as 60%."

Source: Science (23 May 2019)

OPTICS

New Approach Captures Detailed Mid-Infrared Images for Medical Diagnostics

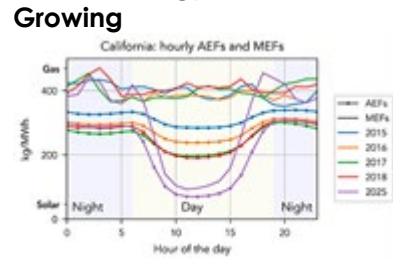


"Researchers developed a new system that uses frequency conversion to shift an entire mid-IR image into the near-infrared wavelength range while preserving the spatial information. The system can be used to look for the chemical specific signatures of cancer and other diseases."

Source: OSA (23 May 2019)

RENEWABLE ENERGY

100% Renewables Doesn't Equal Zero-Carbon Energy, and the Difference Is Growing

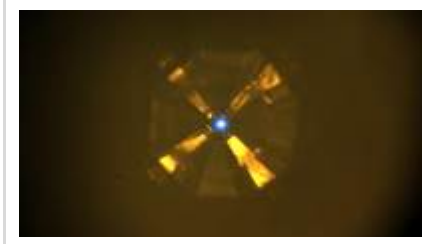


"While 160 companies around the world have committed to use '100 percent renewable energy,' that does not mean '100 percent carbon-free energy.' The difference will grow as power grids become less reliant on fossil power."

Source: Stanford University (24 May 2019)

SUPERCONDUCTOR

Scientists Break Record for Highest-Temperature Superconductor



"Using advanced technology at UChicago-affiliated Argonne National Laboratory, the team studied a class of materials in which they observed superconductivity at temperatures of about minus-23 degrees Celsius (minus-9 degrees Fahrenheit) - a jump of about 50 degrees compared to the previous confirmed record."

Source: University of Chicago News (22 May 2019)

TECHNOLOGY

10 Breakthrough Futuristic Military Technologies to Watch

"We're taking a look at 10 of the coolest technologies currently being developed by the US military today."

Source: Design News (24 May 2019)

TIME MANAGEMENT

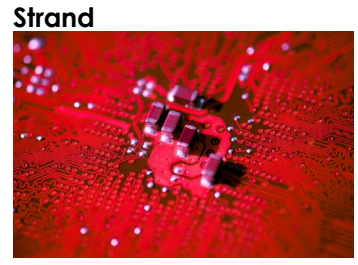
How to Cope with Multiple-Project Paralysis

"Most scholarly writers need calm, contemplative focus so that they can turn abstract concepts into concrete words. So first, accept reality: You can write only one thing at a time. When you sit down to write, only one project should fill your mind. The trick is to arrange your work schedule to make that happen."

Source: The Chronicle of Higher Education (23 May 2019)

TRANSISTORS

Chinese Scientists Develop Transistors About the Width of a Human DNA Strand



"Professor Yin Huaxiang said his team had developed 3nm transistors – about the width of a human DNA strand – and that tens of billions of them could fit on a fingernail-size chip."

Source: South China Morning Post (27 May 2019)

VIRTUAL REALITY

Virtual Reality Can Spot Navigation Problems in Early Alzheimer's Disease

"The study highlights the potential of new technologies to help diagnose and monitor conditions such as Alzheimer's disease."

Source: EurekAlert! (23 May 2019)

To view past Weekly Alerts CLICK HERE
For more articles or in-depth research, contact us at library@sutd.edu.sg