

Weekly Discovery

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1 – 5 March 2021

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

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

AI
AI Shows Public Attitude Toward COVID-19 Is More 'Infectious' Than Disease Itself



"Public attitude toward COVID-19 and its treatments is more "infectious" than the disease itself, according to a new Northwestern Medicine study using Artificial Intelligence (AI) to analyze tweets about the virus. Researchers studied the influence of Twitter on COVID-19 health beliefs as well as the competing influence of scientific evidence versus the speeches of politicians."

Source: [EurekaAlert](#) (1 March 2021)

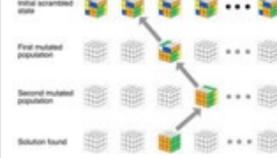
AVIATION
Engineering Student's Technology Could Revolutionize The Use Of Drones



Tomas Pribanic has found a way to apply ion thrust to autonomous aerial vehicles in Earth's atmosphere, creating a silent propulsion system and paving the way for the greater application of drones in the cargo delivery industry.

Source: [Technology.Org](#) (1 March 2021)

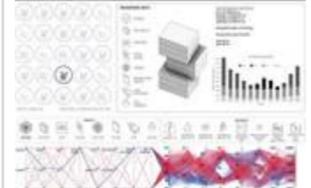
DEEP LEARNING
A Deep Learning Technique To Solve Rubik's Cube And Other Problems Step-By-Step



"The technique devised by Johnson is based on two main approaches: stepwise learning and the use of a deep neural network. When applied to Rubik's cube, the technique tries to unscramble it step by step instead of learning to solve the whole cube at once."

Source: [TechXplore](#) (26 February 2021)

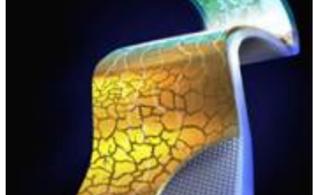
DESIGN
New Sustainable Building Simulation Method Points To The Future Of Design



"A team has put forth a new framework for injecting as much information as possible into the pre-design and early design phases of a project, potentially saving architects and design teams time and money down the road."

Source: [Science Daily](#) (12 February 2021)

ELECTRONICS
A Design To Improve The Resilience And Electrical Performance Thin Metal Film Based Electrodes



Researchers at University of Illinois at Urbana-Champaign have recently introduced a new design that could enable the development of strain-resilient flexible electrodes that conduct electricity well, even when they are stretched or deformed. Read more in [Nature Electronics](#).

Source: [Tech Xplore](#) (1 March 2021)

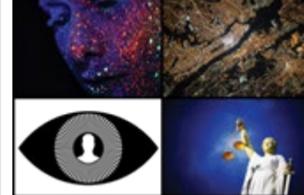
ENERGY
Staff Picks: Potential Energy Game-Changers For 2021



"Innovation in the energy industry is soaring as governments commit to ever more ambitious climate targets and money pours into new technologies. Our staff writers highlight some of the potential energy game-changers for 2021."

Source: [Power Technology](#) (1 March 2021)

ETHICS
Fostering Ethical Thinking In Computing



"A case studies series from the Social and Ethical Responsibilities of Computing program at MIT delves into a range of topics, from social and ethical implications of computing technologies and the racial disparities that can arise from deploying facial recognition technology in unregulated, real-world settings to the biases of risk prediction algorithms in the criminal justice system and the politicization of data collection."

Source: [MIT](#) (2 March 2021)

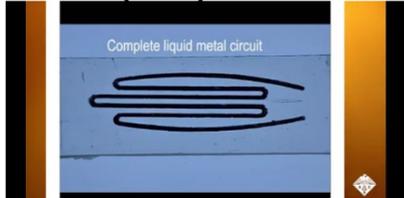
IMAGING
MRI with a Trampoline



"Magnetic resonance imaging, or MRI, is commonly used in hospitals for scanning the bodies of patients. Researchers from Switzerland sought to expand the technique for studying something much smaller -- down to a single virus with atomic resolution."

Source: [Insidescience](#) (17 February 2020)

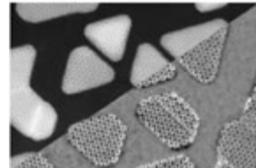
MATERIALS
An Intelligent Soft Material That Curls Under Pressure Or Expands When Stretched (Video)



Now, researchers reporting in ACS Applied Materials & Interfaces have printed liquid metal circuits onto a single piece of soft polymer, creating an intelligent material that curls under pressure or mechanical strain.

Source: [ACS](#) (24 February 2021)

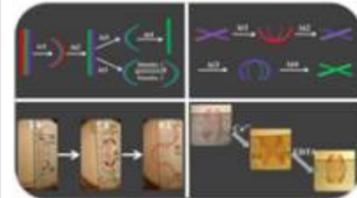
MATERIALS
Engineering The Boundary Between 2D And 3D Materials



"Cutting-edge microscope helps reveal ways to control the electronic properties of atomically thin materials."

Source: [MIT News](#) (26 February 2021)

MATERIAL SCIENCE
4D Bioengineering Materials Bend, Curve Like Natural Tissue



Researchers at the University of Illinois Chicago have developed new 4D hydrogels -- 3D materials that have the ability to change shape over time in response to stimuli. Read more in [Advanced Science](#).

Source: [EurekaAlert!](#) (1 March 2021)

ROBOTS
Sensing Robot Healthcare Helpers Being Developed At SFU



"Robots that could take on basic healthcare tasks to support the work of doctors and nurses may be the way of the future. Who knows, maybe a medical robot can prescribe your medicine someday?" [Journal article link](#)

Source: [Simon Fraser University](#) (26 February 2021)

SENSORS
Hot-Desk Sensors And Movable Walls: Meet The Companies Facilitating The Return To Work



With \$22 million in funding from investors including Tola Capital and Allegion Ventures, San Francisco-based VergeSense tracks more than 40 million square feet of office space.

Source: [Forbes](#) (28 February 2021)

SENSORS
Novel Soft Tactile Sensor With Skin-Comparable Characteristics For Robots



"The sensor is in a multi-layered structure like human skin and includes a flexible and specially magnetised film of about 0.5mm thin as the top layer. When an external force is exerted on it, it can detect the change of the magnetic field due to the film's deformation."

Source: [CUHK](#) (1 March 2021)

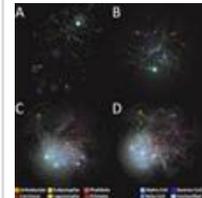
TECHNOLOGY
10 Breakthrough Technologies 2021



"This list marks 20 years since we began compiling an annual selection of the year's most important technologies."

Source: [MIT](#) (24 February 2020)

TECHNOLOGY
Predicting Mammalian Hosts In Which Novel Coronaviruses Can Be Generated



"Our results demonstrate the large underappreciation of the potential scale of novel coronavirus generation in wild and domesticated animals. We identify high-risk species for coronavirus surveillance."

Source: [NATURE](#) (16 February 2020)