

Weekly Discovery

We SHARE to inspire and ignite ideas!

7 OCTOBER 2019 - 11 OCTOBER 2019

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

3D PRINTING
New 3D Printing Technique for Biomaterials



"A new way of 3D printing soft materials such as gels and collagens offers a major step forward in the manufacture of artificial medical implants."

Source: [University of Birmingham](#) (2 October 2019)

5G & IOT
Monetize 5G and IoT Business Models



"This presents CSPs with new business opportunities and, more importantly, it does it without cannibalizing on their current business. It is a new business, which opens possibilities in new unexplored areas. A CSP needs to have a BSS that can monetize the new revenue streams to be able to capture this business potential, and to handle the new business relationships." Read the [whitepaper](#).

Source: [Ericsson](#) (7 October 2019)

ARTIFICIAL INTELLIGENCE
Severance Hospital Develops AI-Platform Detecting Gastric Cancer with High Accuracy



"... developed an artificial intelligence (AI) model that analyzes gastroscopic images to detect early gastric cancer and predict the depth of tumor invasion." Also read at [Journal of Clinical Medicine](#).

Source: [Korea Biomedical Review](#) (8 October 2019)

BATTERIES
Tech Breakthrough: Is This the End of Lithium-Ion Batteries?



"The soon-to-be \$92.2 billion battery market just got a huge boost. Scientists have just created the world's first long-cycle Li-Carbon Dioxide battery, and in a market-shredding first: it's fully rechargeable."

Source: [Oil Price](#) (7 October 2019)

CAREER
Research: When Losing Out on a Big Opportunity Helps Your Career



"Yet our [recent research](#) published today in Nature Communications, coauthored with postdoctoral scholar Yang Wang, shows the right choice may not be as simple as it appears."

Source: [Harvard Business Review](#) (1 October 2019)

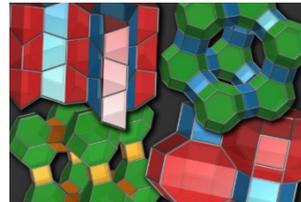
COMPUTING
Mechanisms of Real-Time Speech Interpretation in the Human Brain Revealed



"Scientists have come a step closer to understanding how we're able to understand spoken language so rapidly, and it involves a huge and complex set of computations in the brain."

Source: [Science Daily](#) (30 September 2019)

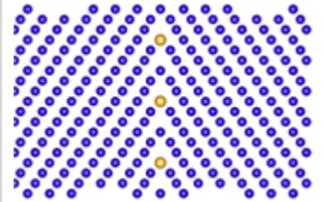
MATERIALS SCIENCE
A New Mathematical Approach to Understanding Zeolites



"Now, the MIT team has developed a mathematical approach to describing the different molecular structures. The approach is based on graph theory, which can predict which pairs of zeolite types can be transformed from one to the other." Read more [Nature Materials](#).

Source: [MIT News](#) (7 October 2019)

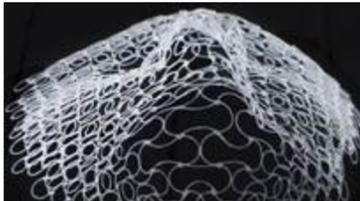
MATERIALS SCIENCE
Hard as Ceramic, Tough as Steel



"A new way to calculate the interaction between a metal and its alloying material could speed the hunt for a new material that combines the hardness of ceramic with the resilience of metal."

Source: [University of Michigan](#) (2 October 2019)

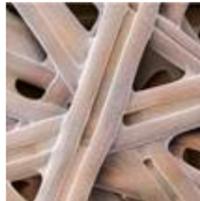
MATERIALS SCIENCE
Shape-Shifting Structures Take the Form of a Face, Antenna



"Researchers have created the most complex shape-shifting structures to date -- lattices composed of multiple materials that grow or shrink in response to changes in temperature."

Source: [Harvard](#) (1 October 2019)

MATERIALS SCIENCE
The Future of Silk



"... by changing the way silk protein is processed from water—they could also create new transparent materials of natural protein that could be molded into tiny needles that cause no irritation to the skin; flexible and biodegradable implantable electronics that record our brain signals."

Source: [Scientific American](#) (30 September 2019)

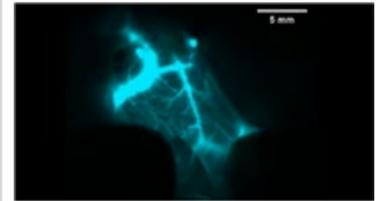
MEDICAL DEVICES
Printing Custom Flexible Electronics Directly onto Skin, Bandages, Medical Devices



"The capability is possible thanks to two new advances. One is a new silver nanowire conductive ink. It can be printed at low temperatures and doesn't need additional processing."

Source: [Medgadget](#) (3 October 2019)

MEDICAL IMAGING
Stanford Chemist Develop 'Infrared Vision' for Cancer Immunotherapy



"Stanford chemists have developed a new deep-tissue imaging technique that can see beneath the skin of living subjects to illuminate buried tumors with unparalleled clarity."

Source: [Stanford News](#) (3 October 2019)

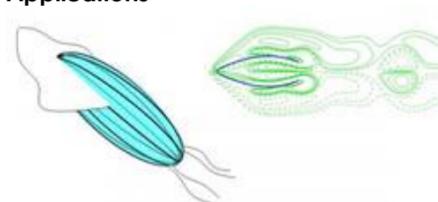
PROPULSION SYSTEM
Salt-Based Fuel Drives Electric and Combustion Propulsion



"... we created a propellant that is a mixture of two commercially available salts - hydroxylammonium nitrate and emim ethylsulphate. We have published other research papers showing that salt propellants work in the high-acceleration combustion mode. Now we know that this unique combination of salts will also work in the electric fuel-efficient mode."

Source: [The Engineer](#) (7 October 2019)

ROBOTICS
Squid-Inspired Robots Might Have Environmental, Propulsion Applications



"Scientists studied fluid mechanics to simulate and build a squidlike robot that's fast, quiet and hard to see."

Source: [EurekAlert!](#) (1 October 2019)

SPACE
China Grows a Cotton Plant on the Far Side of the Moon in a Biological First



"China has broken new lunar ground, successfully growing cotton on the moon for the first time. The experiment was part of the Chang'e 4 project, in which China is exploring the far side of the moon with a lander."

Source: [Digital Trends](#) (6 October 2019)

TECHNOLOGY
Accenture Technology Vision 2019



"The Accenture Technology Vision 2019 lays out the inarguably bold and complex path that businesses will encounter in the coming years, as digital continues to take hold and the next wave of powerful technologies ushers in a new era."

Source: [Accenture](#) (2019)