

Weekly Discovery

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4 – 8 Jan 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

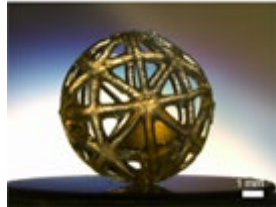
3D PRINTING
3D-Printed Smart Gel Changes Shape When Exposed To Light



.. created a 3D-printed smart gel that changes shape when exposed to light, becomes "artificial muscle" and may lead to new military camouflage, soft robotics and flexible displays.

Source: [EurekAlert!](#) (5 Jan 2020)

3D PRINTING
3D-Printing Hollow Structures With "Xolography"



"New technique uses criss-crossing light beams in a vat of resin to create simple machines with moving parts."

Source: [IEEE Spectrum](#) (28 Dec 2020)

AI
Using Artificial Intelligence To Find New Uses For Existing Medications



"Scientists have developed a machine-learning method that crunches massive amounts of data to help determine which existing medications could improve outcomes in diseases for which they are not prescribed."

Source: [Ohio State University](#) (4 Jan 2021)

ARCHITECTURE
The Transformative Buildings Set To Shape The World In 2021



"The pandemic may have brought work to a halt on projects around the world, but next year is nonetheless set to welcome an exciting array of new buildings."

Source: [CNN](#) (1 Jan 2021)

ARCHITECTURE
Twelve Buildings To Look Forward To In 2021



From a coastal library by MAD to an adaptive reuse project by Tadao Ando, we've rounded up 12 of the most interesting architecture projects that are slated for completion in 2021.

Source: [Dezeen](#) (2 Jan 2021)

BATTERIES
Boosting The Next Generation Of Batteries



The team's design involves a porous material that encapsulates sulfur nanoparticles, with numerous binding sites embedded within. These sites effectively immobilize and absorb the sulfide ions that leak from the cathode, eliminating the shuttle effect and corrosion of lithium

Source: [Asian Scientist](#) (4 Jan 2021)

DESALINATION
Desalination Breakthrough Could Lead to Cheaper Water Filtration



"The researchers determined desalination membranes are inconsistent in density and mass distribution, which can hold back their performance. Uniform density at the nanoscale is the key to increasing how much clean water these membranes can create."

Source: [University of Texas](#) (31 Dec 2020)

ECONOMY
Global Economic Outlook - December 2020



"The coronavirus is once again taking its toll on economic activity as the second wave prompts new restrictions, but the vaccine news is a game changer for the outlook over the next two years."

Source: [Fitch Ratings](#) (Dec 2020)

FACIAL RECOGNITION
New Research: Kids Can Identify Emotions On Masked Faces



"Children can still understand, to an extent, the expressions on masked faces, according to a new study published in PLOS One."

Source: [The Indian Express](#) (30 Dec 2020)

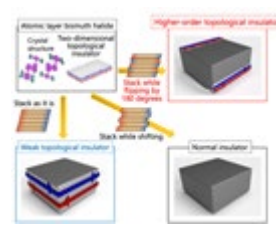
HEALTH TECHNOLOGY
Digital Stethoscopes Deliver Heightened Value For Pandemic Care



The protective benefits of digital stethoscopes became more evident in 2014 during the Ebola crisis, when the tools were sent to medical teams in Africa, says Clive Smith, CEO of Thinklabs Medical, a manufacturer of the technology.

Source: [HealthTech](#) (4 Jan 2021)

MATERIAL
A High Order For A Low Dimension



"Spintronics refers to a suite of physical systems which may one day replace many electronic systems...For the first time, researchers created such a material in the form of a special bismuth-based crystal known as a high-order topological insulator."

Source: [University of Tokyo](#) (5 Jan 2021)

MICROELECTRONICS
Stretching Diamond For Next-Generation Microelectronics



"A joint research team led by City University of Hong Kong (CityU) has demonstrated for the first time the large, uniform tensile elastic straining of microfabricated diamond arrays through the nanomechanical approach."

Source: [HONG KONG CITY UNIVERSITY](#) ((1 Jan 2021)

ROBOTICS
Robots Made Of Ice Could Build And Repair Themselves On Other Planets



The IROS paper takes a look at different ways of manufacturing robotic structural components from ice using both additive and subtractive manufacturing processes, with the goal of developing a concept for robots that can exhibit "self-reconfiguration, self-replication, and self-repair."

Source: [IEEE Spectrum](#) (6 Jan 2020)

SMART DEVICES
Portable Device Can Quickly Detect Plant Stress



Sensor developed by SMART researchers would allow rapid diagnosis of nutrition deficiency in plants, enabling farmers to maximize crop yield in a sustainable way.

Source: [MIT News](#) (4 Jan 2020)

TECHNOLOGY
Tech That Will Change Your Life In 2021



"New ways to work, exercise, see the doctor, watch movies and sanitize every surface in sight will continue to proliferate. So will monthly subscription fees."

Source: [The Wall Street](#) (2 Jan 2020)

TECHNOLOGY
The 10 Most In-Demand Tech Jobs For 2021 — And How To Hire For Them



"From security pros to developers to analysts, the battle for the best IT talent wages. Here's what to look for (and what to offer) when hiring for the 10 most in-demand jobs for 2021."

Source: [CIO](#) (30 Dec 2020)

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