

Weekly Discovery

We SHARE to inspire and ignite ideas!

4 June 2018 - 8 June 2018

3D BIOPRINTING

Scientists 3D Print First Human Corneas



A human cornea was successfully 3D printed for the first time. It is good news for millions of patients who are suffering from corneal blindness. Read more at [Experimental Eye Research](#).

Source: [US News](#) (31 May 2018)

3D PRINTING

Creating Piece of Mind



This new [3D printing technique](#), spearheaded by the Wyss Institute at Harvard and the MIT Media Lab, could enable faster, sharper and cheaper biological print-outs for research and diagnosis based on MRI and CT scans.

Source: [The Harvard Gazette](#) (1 June 2018)

ACOUSTIC DESIGN

Time to Turn It Down



This column discusses on some best practices for restaurants, on how to better use materials that can help in noise insulation to provide a better dining experience. The author also shared some useful tips and techniques.

Source: Design and Architecture (Issue 103) Available @ SUTD Library (Call Number NA1 D)

ARCHITECTURE

Beyond Sun Block: Innovative Shading Solutions Not Only Provide Protection but Further Architectural Expression



The article offers a holistic approach to shade design, which aims at protecting buildings from solar radiation and enhancing architectural expression. The shade design project shared in the article is targeting to obtain the [Living Building Challenge \(LBC\) Certification](#).

Source: [Architectural Record](#) (May 2018) Available @ SUTD Library (Call Number NA1 ARC)

AUTOMATION

A New Ranking – Countries Ready for the Coming Wave of Automation



Singapore is ranked 3rd on automation readiness index, according to this [report](#). It also highlighted that more effective policies and trainings are required to meet the challenges of future work, and education will play an important role in preparing our future generation for jobs of tomorrow.

Source: [University World News](#) (31 May 2018)

AUTOMOTIVE

Towards Realistic Walk Path Simulation in Automotive Assembly Lines: a Probabilistic Approach

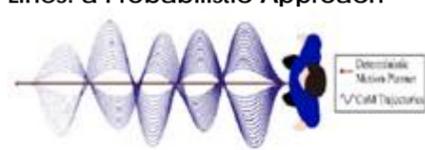


Fig. 1. Disparity between a global motion planner and real center of mass trajectory.

Get insights of a probabilistic two-dimensional motion planner derived from 600,000 samples of motion models, aiming to improve efficiency and performance in automotive assembly.

Source: [Procedia CIRP](#) (2018)

DIGITAL OPERATIONS

Global Digital Operations Study 2018



PwC interviewed more than 1,000 executives from the manufacturing industry to find out how industry leaders build digital operation ecosystems to deliver end-to-end customer solutions.

Source: [PwC](#) (May 2018)

DRONES

'Free Parasol' Drone Keeps You Shaded and Hands-Free



An umbrella hovering over your head protecting you from the sun and rain could be a reality in 2019. This is made possible by the GPS system that syncs with the drone that tracks your position and follows you in lock-step.

Source: [The Drive](#) (4 June 2018)

DRONES

TIME Creates Its Latest Magazine Cover with the Help of 958 Drones



The June special issue of TIME magazine, titled "The Drone Age", is going to have a specially-created cover with the use of a fleet of drones. A behind-the-scenes video features further exploration on possible uses of drones.

Source: [designboom](#) (1 June 2018)

INNOVATION

World Changing Ideas

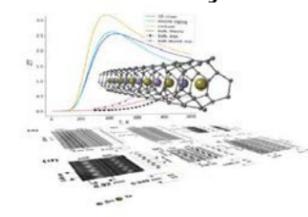


10 visionary and bold projects were highlighted in the 2018 Fast Company World Changing Ideas Awards. Some notable ideas include recycling materials, more environment-friendly disinfectant spray, and an app for disaster relief.

Source: Fast Company (May 2018) Available @ SUTD Library (Call Number HF5001 FAS)

NANOMATERIALS

Atomically Thin Nanowires Convert Heat to Electricity More Efficiently



Introducing a new way of [generating sustainable energy](#). Waste heat can be converted to electricity more efficiently using one-dimensional nanoscale materials, which are as thin as atoms and can conduct less heat but more electricity at the same time.

Source: [Phys.org](#) (1 June 2018)

PRODUCT DESIGN

The Technology That Gives Audiences a Voice Like Never Before

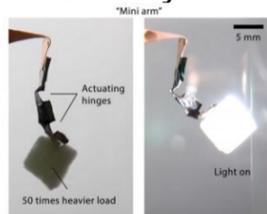


This eye-catching wireless microphone is lightweight, soft and durable for tossing around and engaging people to voice out. Named [Catchbox](#), this brilliant idea was developed by 3 college students aiming at addressing a real-life issue in classrooms.

Source: [Forbes](#) (30 May 2018)

ROBOTICS

Future Robots Need No Motors HKU Engineering Invents World's First Nickel-Hydroxide Actuating Material That Can Be Triggered by Both Light and Electricity



A novel actuating material that can be powered by visible light, electricity or other stimuli. This new material is able to instantly produce a fast deformation and exert a force equivalent to 3,000 times of its own weight.

Source: [The University of Hong Kong](#) (31 May 2018)

VENICE ARCHITECTURE BIENNALE

Canada's Indigenous Architecture Biennale Exhibit Weaves Nature, Culture and Technology



Unlike traditional exhibitions which only showcase static models, the Venice Architecture Biennale makes its exhibition alive with a combination of architecture, voice and scene.

Source: [The Guardian](#) (31 May 2018)

WARPLANE DESIGN

Sea Sentinel



Interested in designing war planes? Read on and explore the detailed architecture of Lockheed P2V Neptune patrol bomber. Aircraft specifications are presented on pages 40 and 41.

Source: [Aviation History](#) (July 2018) Available @ SUTD Library (Call Number TL515 AVI)

WIRELESS NETWORKS

Keeping Data Fresh for Wireless Networks



Researchers at MIT developed an algorithm that can provide the "freshest" possible data to a simple wireless network. At the IEEE's International Conference on Computation Communications (Infocom), the project won the Best Paper Award.

Source: [MIT News](#) (4 June 2018)