

Weekly Discovery

We SHARE to inspire and ignite ideas!

17 April 2017 – 21 April 2017



Special Highlight

Educational Gaming

Educational gaming is the development of games purposefully designed to educate players and facilitate acquiring knowledge, learning skills and understanding subjects or concepts. Game-based teaching and learning has gradually become a pedagogical trend with growing attraction due to psychological needs and benefits of gaming, such as enjoyment, motivation, engagement, cognition, cooperation, and creativity. Gamification of teaching and learning has also been heatedly explored and discussed in recent years so as to achieve greater learning outcomes.

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ARCHITECTURE

Solar-powered drone Skystation sits atop Trump World Tower in New York



Kayak architects Skystation project looks at changing the way we commute around cities. The project transforms skyscraper rooftops into air transport hubs which in return help to reduce pollution from land traffic and enable more walkable and green spaces.

Source: [Inhabitat](#) (17 April 2017)

ARTIFICIAL INTELLIGENCE

Google is using AI to help humans and computers communicate through art



Autodraw uses artificial intelligence (AI) and allows users to sketch images, analyses them and suggests professionally-drawn images for you to select.

Source: [Popular Science](#) (15 April 2017)

DRONES

The end of the courier? Self-driving 'Starship' robot buggies are now delivering Hermes parcels in London

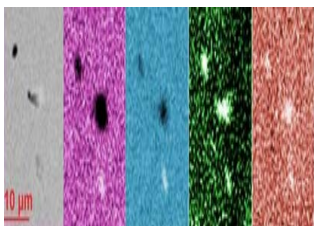


Autonomous ground drones are now delivering parcels. The parcels can be opened via an app and also allows tracking of the drones' location. If anyone attempts to tamper with them it can send the police straight to where the drone is. A camera in the drone can also help identify the culprit.

Source: [DailyMail](#) (12 April 2017)

MATERIAL SCIENCE

Computers create recipe for two new magnetic materials



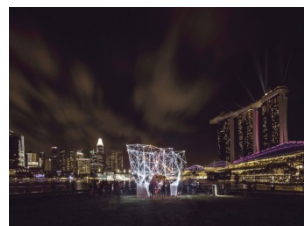
Searching for new magnetic materials conventionally is time-consuming and complicated, which prompted scientists to predict magnetism in new materials by computer models that can quickly look through many materials. This process helped to create two new magnetic materials.

Read more at [Science Advances](#).

Source: [Sciencedaily](#) (15 April 2017)

PARAMETRIC DESIGN

SUTD Professors Bring Parametric Design To Light in Illuminated 3D Printed Installation

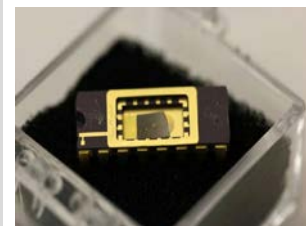


Explore the latest interactive 3Dprinted (Ultra) Light Network designed by our own ASD Faculty. Parametric design was used to customise the geometric structures and coordinate light transmission

Source: [ArchDaily](#) (15 April 2017)

PHOTODETECTORS

Graphene 'phototransistor' promising for optical technologies



Researchers have combined graphene with a larger silicon carbide substrate to form graphene field-effect transistors (GFETs), which get activated by light, to produce high resolution images. Possible application in high-speed communications, cameras for astrophysics, as well as in sensing applications and wearable electronics.

Source: [Phys.org](#) (12 April 2017)

ROBOTIC EXOSKELETON

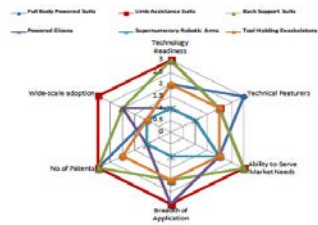
Emerging Robotic Exoskeleton Technologies

SOLAR CELLS

A New Record For Perovskite Solar Cell Efficiency

VIRTUAL REALITY

The Final Frontier In Virtual Reality? Hacking Your Muscles



This report provides updates on robotic exoskeleton technologies. Topics covered include the impact of these technologies in the future, factors affecting the proliferation of robotic exoskeleton technologies, patent analysis, industry initiatives and innovations in robotic exoskeleton technologies.

Source: [Frost & Sullivan](#) (7 April 2017)



Researchers have designed an inexpensive technique that produces inorganic-organic hybrid perovskite solar cells (PSCs), which have high efficiency. The PSCs were also shown to be able to retain 93% of their initial performance after 1000 hours of sunlight exposure. Read more at [Science](#).

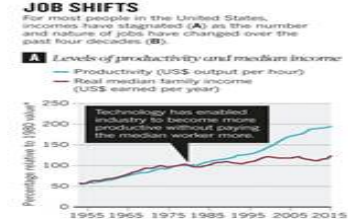
Source: [Asian Scientist](#) (12 April 2017)



While engaging in Virtual reality a person is not able to have any physical sensations when touching a virtual object. Feeling virtual objects is now possible via a wearable vest that transmits tiny bursts of electric shocks to your muscles when you touch the virtual blocks.

Source: [Co.Design](#) (14 April 2017)

WORK AND TECHNOLOGY
We Must Track How Technology Is Changing Work



Governments and policy makers need to understand and gather essential information and data to understand what actions are to be taken for the next industrial revolution. They need to learn from private sector companies in terms of real-time data collection, real-time policy experiments and shift towards data-driven decision-making

Source: [Scientific American](#) (17 April 2017)

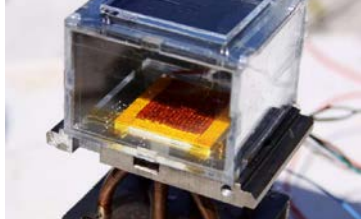
WORKPLACE DESIGN
Innovation spaces: The new design of work



[Trends in modern innovation for the workplace](#). Also mentioned that well-designed innovation spaces enhance competitiveness of companies, promote company culture and allow new products and ideas to be readily developed. Also read about how workplace design can reduce stress at [Dezeen](#).

Source: [Brookings](#) (10 April 2017)

WATER HARVESTING
Device pulls water from dry air, powered only by the sun



A water harvesting device that uses only solar energy to extract water out of the air, even in very dry climates. It was found that 2.8 liters of water could be extracted by the device in half a day with 1 kilo of MOF, in extremely dry conditions. Read more at [Science](#).

Source: [Phys.org](#) (13 April 2017)

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