

Weekly Discovery

We SHARE to inspire and ignite ideas!

18 NOVEMBER 2019 - 22 NOVEMBER 2019

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

Stay up to date by subscribing to any of these **9 Topical Reports** - [CLICK HERE TO SUBSCRIBE NOW](#)

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

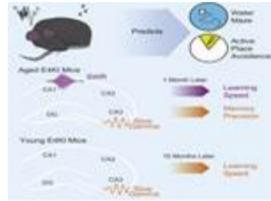
BIG DATA
Mapping Disease Outbreaks in Urban Settings Using Mobile Phone Data



"A new EPFL and MIT study into the interplay between mobility and the 2013 and 2014 dengue outbreaks in Singapore has uncovered a legal void around access to mobile phone data – information that can prove vital in preventing the spread of infectious diseases."

Source: [Ecole Polytechnique Fédérale de Lausanne](#) (15 November 2019)

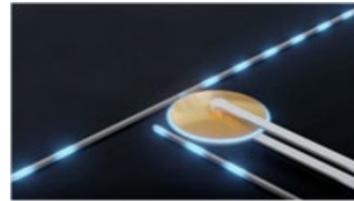
DATA SCIENCE
Predicting Alzheimer's Disease-Like Memory Loss Before It Strikes



"New study shows how patterns in brain activity can be an early predictor of Alzheimer's symptoms."

Source: [EurekAlert!](#) (19 November 2019)

ELECTRONICS
A Tiny Switch Could Redirect Light Between Computer Chips in Mere Nanoseconds



"Now, [newly designed switches redirect light in less than a millionth of a second](#) using just about one volt of electricity — comparable to the voltages used in ordinary electronics, researchers report in the Nov. 15 *Science*. Electronics outfitted with the new switch design to process data with light rather than electricity could help self-driving cars scan their surroundings for traffic and pedestrians or read out information from quantum computers."

Source: [ScienceNews](#) (14 November 2019)

ENVIRONMENT
Rainy, with a Chance of Rockfalls: New Landslide Forecasting System Debuts in Rio



"LHASA, which cost the city about \$11,000 to install, creates what it calls 'nowcasts.' Those are near-real-time forecasts of where landslides are most likely to happen in the next few minutes—based on past rainfall data and other variables, including hill slope angles, local rock and soil types, and whether an area has been deforested, as well as how close geologic structures such as faults are."

Source: [Science Magazine](#) (19 November 2019)

HEALTHCARE
Global Healthcare Report Q3 2019



"Our healthcare report gives a data-driven look at global healthcare technology investment trends, top deals, active investors, and corporate activity in Q3 2019."

Source: [CBInsights](#) (14 November 2019)

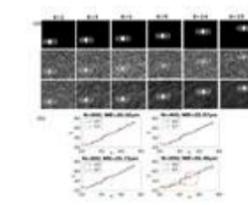
HEALTHCARE
Why Virtual Brain Simulations Are the Future of Health Care



"GE Healthcare CEO Kieran Murphy and Dassault Systèmes chief executive Bernard Charlès laid out how their companies are trying to realize that digital health dream at this very moment—including through technology that can virtually replicate human hearts and brains and warn health care workers of impending emergencies."

Source: [Fortune](#) (18 November 2019)

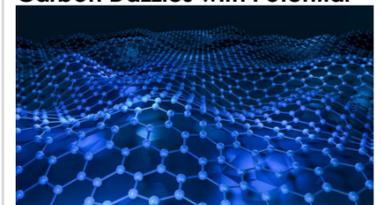
IMAGING TECHNOLOGY
Researchers Capture Moving Object with Ghost Imaging



"Researchers have developed a way to capture moving objects with the unconventional imaging method known as ghost imaging. The new method could make the imaging technique practical for new applications such as biomedical imaging, security checks and video compression and storage."

Source: [Science Daily](#) (13 November 2019)

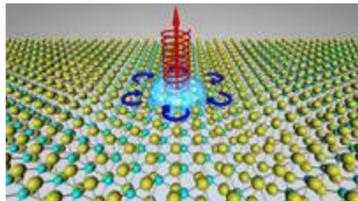
MATERIALS SCIENCE
The Next Graphene? Shiny and Magnetic, a New Form of Pure Carbon Dazzles with Potential



"It is harder than stainless steel, about as conductive, and as reflective as a polished aluminum mirror. Perhaps most surprising, the substance appears to be ferromagnetic, behaving like a permanent magnet at temperatures up to 125°C—a first for carbon."

Source: [Science Magazine](#) (12 November 2019)

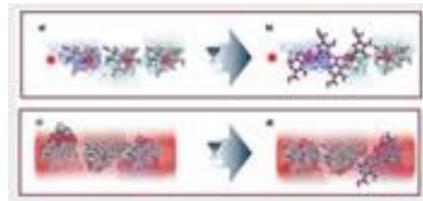
PHYSICS
New Research Finding Gives Valleytronics a Boost



"An international research team led by physicists at the University of California, Riverside, has revealed a new quantum process in valleytronics that can speed up the development of this fairly new technology."

Source: [Phys.org](#) (28 October 2019)

PHYSICS
Quantum Light Improves Sensitivity of Biological Measurements



Source: OSA Publishing
 "New approach combines quantum physics and biology to improve enzyme activity measurements." Read more at [Optics Express](#).

Source: [Science Daily](#) (18 November 2019)

RECYCLING
Revolutionary Recycling? A New Technology Turns Everyday Trash into Plastic Treasure.



"The magic that we're doing is we're taking everything — the chicken bones, the banana peels ... We take this waste, and we convert it ... The result is ... a thermoplastic, composite, bio-based, sustainable, climate-positive material."

Source: [The Washington Post](#) (18 November 2019)

RESEARCH
Conflict in Your Research Group? Here Are Four Strategies for Finding a Resolution



"Drawing on our own experiences and challenges, we offer four strategies for resolving conflict in the lab. No one is perfect in this domain—including us!—but there is usually something that you can do better, and this is a skill that we should all try to cultivate."

Source: [Science Magazine](#) (18 November 2019)

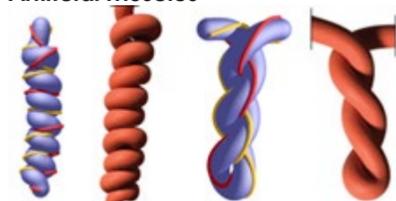
RESEARCH
PhDs: The Tortuous Truth



"Nature's survey of more than 6,000 graduate students reveals the turbulent nature of doctoral research."

Source: [Nature](#) (13 November 2019)

ROBOTICS
A Better Understanding of Soft Artificial Muscles



"Artificial muscles will power the soft robots and wearable devices of the future. But more needs to be understood about the underlying mechanics of these powerful structures in order to design and build new devices. Now, researchers have uncovered some of the fundamental physical properties of artificial muscle fibers."

Source: [Harvard John A. Paulson School of Engineering and Applied Sciences](#) (15 November 2019)

STRUCTURE
Ecosystem Kickstarter Is a Cardboard Structure That Fights Soil Erosion



"The simple, modular, cardboard system, which was first presented at Dutch Design Week, is embedded in a slope of degraded earth and filled with local soil. This forms a terracing structure to prevent the runoff of seeds and nutrients in rainwater."

Source: [dezeen](#) (16 November 2019)

WOMEN IN DESIGN
Five Female Trailblazers Who Changed the Field of Design



"Charlotte and Clementine Fiehl's book, *Women in Design*, highlights what made figures like Apple icon designer Susan Kare and architect Zaha Hadid revolutionary. The authors pick five women from the book who transformed design."

Source: [dezeen](#) (18 November 2019)