

Weekly Discovery

We SHARE to inspire and ignite ideas!

14 May 2018 - 18 May 2018

ARCHITECTURE
20 Buildings Receive RIBA Awards for International Excellence 2018



Read about these 20 outstanding projects that were selected for their architectural ambition, design ingenuity and excellence of execution by The Royal Institute of British Architects.

Source: [Architectural Record](#) (10 May 2018)

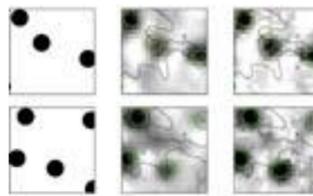
ARTIFICIAL INTELLIGENCE
Lie-Detecting Computer Kiosks Equipped with Artificial Intelligence Look like the Future of Border Security



[iBorderCtrl](#) is able to check security by monitoring the eye movements of human beings. The software can find its place in industries like human resource, law enforcement and many others.

Source: [CNBC](#) (15 May 2018)

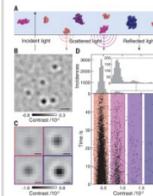
ARTIFICIAL INTELLIGENCE
Researchers Reconstruct Videos Just from Neural Signals



Signals extracted from the retinas of rats are used to [reconstruct movies](#) of what they saw. Aiming to figure out the relationship between photons hitting our eyeballs and images appearing in our brains.

Source: [Discover Magazine](#) (10 May 2018)

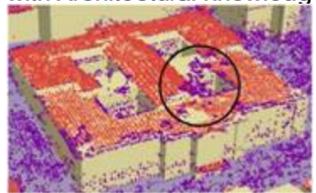
BIO IMAGING
Weighing Biomolecules with Light



Light can now be used to [observe the weight of biomolecules](#), offering insights into molecular dynamics so as to assist in timely diagnostics. Also read about this [2D/3D imaging system](#) for cancer diagnostics.

Source: [Optics & Photonics News](#) (11 May 2018)

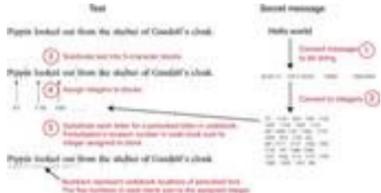
BUILDING INFORMATION MODELLING
Automatic Building Information Model Reconstruction in High-Density Urban Areas: Augmenting Multi-Source Data with Architectural Knowledge



This paper proposes a method - multi-Source rectification of gEometric Primitives (mSTEP) - for automatic reconstruction of BIMs in high density urban areas.

Source: [Automation in Construction](#) (September 2018)

CODING
Researchers Hide Information in Plain Text



Embedding hidden information in ordinary text by imperceptibly changing the shape of fonts. This first ever document-independent technique is able to retain secret information even when a document is printed or converted.

Source: [Columbia University](#) (10 May 2018)

GENOME TECHNOLOGY
Genome Surgery for Eye Disease Moves Closer to Reality



A powerful gene editing tool CRISPR is used to restore retinal function of mice which were afflicted by the degenerative retinal disease.

Source: [American Academy of Ophthalmology](#) (11 May 2018)

GREENHOUSE GAS REDUCTION
New Technology Could Slash Carbon Emissions from Aluminium Production



Research on carbon-free aluminium production has been ongoing for decades. Check out this disruptive method which could remove CO₂ from aluminium smelting processes.

Source: [The Guardian](#) (10 May 2018)

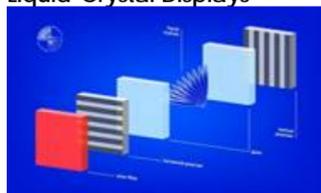
INDUSTRY 4.0
Succeeding in the Age of Digital Transformation



This report details what is needed to be done for companies to be successful in the 4th industrial revolution. Innovation for greater value, collaborations with partners and working towards the future.

Source: [Deloitte](#) (8 May 2018)

LIQUID-CRYSTAL DISPLAYS
Researchers Offer New Technology for Liquid-Crystal Displays



Scientists found that multi-domain display could overcome the inaccurate rendering of colours on traditional LCDs. The findings are helpful in enhancing the visual angle of LCDs. Read also at [ACS](#).

Source: [FurekAlert!](#) (11 May 2018)

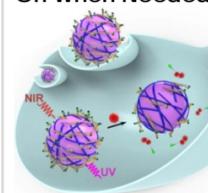
MEDICAL ROBOT
Don't Be Shy. This AI Robot Just Wants to Help You Get Dressed.



A smart robot that assists to get a patient dressed. This helps to relief some work for the caregivers and nurses, which in turn boost up their productivity.

Source: [Futurism](#) (16 May 2018)

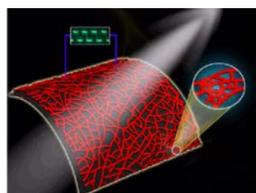
NANOTECHNOLOGY
Remote-Controlled DNA Nanodevice On When Needed



A new [technology](#) that activates biosensors inside living cells at desired time through remote near-infrared light. It prevents the sensors to be accidentally turned on, where false information may occur.

Source: [Materials Today](#) (11 May 2018)

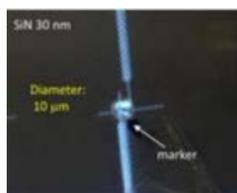
NANOWIRES
Silicon Nanowires Could Enable Smart Solar Windows



A new [approach](#) based on transparent nanowire networks created from silicon-on-insulator could pave the way for transparent cameras and CMOS photodetectors.

Source: [IEEE Spectrum](#) (10 May 2018)

SENSORS
A Micro-Thermometer to Record Tiny Temperature Changes



Read about this new micrometer-wide [thermometer](#) that is sensitive to heat generated by optical and electron beams. Providing insights into heat transport on the micro- and nano-scales.

Source: [FurekAlert!](#) (14 May 2018)

URBAN DESIGN
The S + 5Ds: Spatial Access to Pedestrian Environments and Walking in Seoul, Korea



Be intrigued by this study which determines how street configuration, combined with pedestrian environments, affects pedestrian mobility by capturing spatial accessibility and centrality to pedestrian environments.

Source: [Cities](#) (July 2018)

WORK-LIFE BALANCE
How Do You Achieve a Good Work-Life Balance?



Will you quit your jobs due to longer working hours? Check out how people find their ways to prioritise between the work and personal life.

Source: [Net](#) (May 2018)
Available @ SUTD Library (Call Number TK5105 NET)

To view past Weekly Alerts [CLICK HERE](#)
For more articles or in-depth research, contact us at library@sutd.edu.sg
A SUTD Library Service©2018