Weekly Discovery

We SHARE to inspire and ignite ideas!

5 March 2018 - 9 March 2018

SPECIAL FEATURE by SUTD LIBRARY

Future Technology That Will Change Our World

There are numerous top lists of emerging innovative technologies out there predicting the new frontiers of our fast advancing world. Among them **Artificial Intelligence**, **Automation**, **Blockchain**, **Gene Editing**, **Immersive Technology** and **Quantum Computing** are the highly shortlisted disruptive technologies that will transform manufacturing, finance, healthcare and almost all aspects of our lives in the near future. This list contains over 30 resources mostly published within the past 3 years and aims to offer insights from various reliable sources, including consulting firms, news agencies, conference proceedings, journals, book titles, and more.

DOWNLOAD

ARTIFICIAL INTELLIGENCE

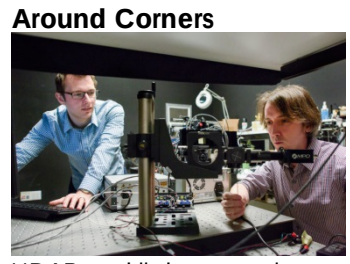
AI Has Its Eye on Enterprise

Most of us own multiple devices. How could digital marketers leverage Artificial Intelligence for more targeted and effective advertising campaigns so as to cope with the cross-screen problem?

Source: Asian Scientist (Jan - Jun 2018)
Available @ SUTD Library (Call Number Q80 ASI)

AUTONOMOUS CARS

Stanford Researchers Develop Technique to See Objects Hidden Around Corners



LIDAR and light scattering technology can be employed in self automated cars to identify hidden objects in curved regions and reduce the risks of accidents. Read more at Nature.

Source: Stanford University (5 March 2018)

AVIATION

Style over Substance

This futuristic XF-90 fighter has been marketed by many for its striking look and supersonic speed. Read on and explore why this celebrated jet did not serve its function and what was the fate of XF-90.

Source: Aviation History (March 2018)
Available @ SUTD Library (Call Number TL515 AVI)

BIOMEDICAL SCIENCE

Why DARPA Wants to 'Freeze' Soldiers on the Battlefield

A new technology that "slows life to save life" has been developed to provide treatments which literally slow down the injured body's biochemical reactions until medical care is available.

Source: Live Science (5 March 2018)

CONSERVATION

Open Sourcing Conservation

Turtle conservation programmes now could be less costly leveraging on open source software Raspberry Pi, compared to its commercial equivalents.

Source: Linux User & Development (February 2018)
Available @ SUTD Library (Call Number QA76 LIN)

ENTREPRENEURSHIP

How to Survive 150 Straight Rejections

An entrepreneur shares his learnings on how funding is important in launching your ideas but not necessary for success. It is more important to concentrate on building your business first and seeking funds later if you can't raise any.

Source: Entrepreneur (Jan / Feb 2018)
Available @ SUTD Library (Call Number HF5001 ENT)

GENE EDITING

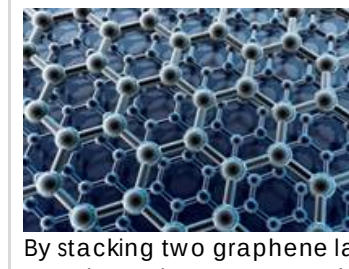
Stem Cell 'Twins' to Study Disease, Gene Editing Method with Absolute Precision

New gene editing technique guides the cell's own repair mechanisms. It aims to improve the understanding of disease mechanisms which ultimately could lead to therapies. Read more at Nature.

Source: EurekAlert! (5 March 2018)

GRAPHENE

Surprise Graphene Discovery Could Unlock Secrets of Superconductivity



By stacking two graphene layers at certain angles a superconductors which can work above 0 ºC is formed. This could revolutionise power transmission and transportation industries. Also read two Nature publications: Article 1 & Article 2.

Source: Nature (5 March 2018)

MATERIALS SCIENCE

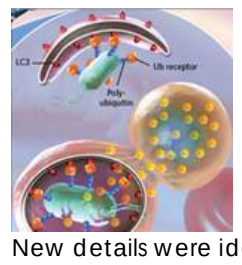
Recent Innovations in Thermoplastics, Supercapacitors, Wood, Textiles, and Electrocatalysts

Read about the improved applications and innovative attributes of these materials, including thermoplastics, wood, and electro-catalysts, which can be widely used across multiple industries.

Source: Frost & Sullivan (2 March 2018)

MOLECULAR PROCESS

Eat Yourself to Live: Autophagy's Role in Health and Disease

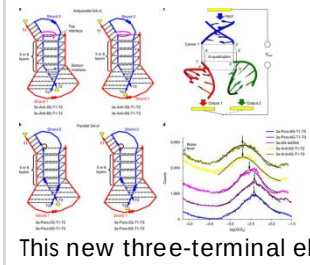


New details were identified at cellular level to block cancer growth and develop potential therapeutic interventions for further research. Also check out the enclosed detailed infographics.

Source: The Scientist (1 March 2018)

NANO ELECTRONICS

Guanine Quadruplexes Make Good Charge Transport Junctions

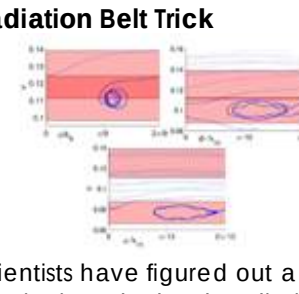


This new three-terminal electronic circuit element has the ability to charge with just one terminal and discharge with another one or two terminals. Read more at Nature.

Source: nanotechweb (5 March 2018)

NONLINEAR DYNAMICS

Nonlinear Pendulum Equations and Space Plasma Reveal Potential Radiation Belt Trick

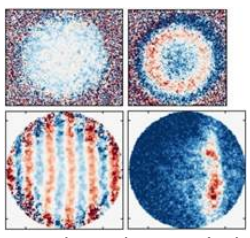


Scientists have figured out a way to manipulate the harsh radiation within the Van Allen radiation belt in the earth's atmosphere. This could enable protection from radiation damage on satellites and equipment when coming in contact with the belt. Read also the AIP publication.

Source: AIP SCILIGHT (2 February 2018)

PHYSICS

JILA Team Invents New Way to 'See' the Quantum World



New imaging technique, combining spectroscopy which adds a new atomic-level detail to the studies of phenomena of magnetism and superconductivity, may allow scientists to see new connection between quantum physics and gravity. Read also at APS.

Source: National Institute of Standards and Technology (5 March 2018)

SOFT ROBOTIC SENSING

3D Printing Method Embeds Sensing Capabilities in Robotic Actuators

Harvard researchers developed a new type of conductive ink which can be 3D printed into sensors embedded within soft robots, enabling the robots to sense and respond to their surroundings.
Read more also at Advanced Materials.

Source: Printed Electronics World (5 March 2018)

SOLAR CELLS

Materials 'Sandwich' Breaks Barrier for Solar Cell Efficiency

Researchers at NYU have utilised squaraine molecule and Förster resonance energy transfer mechanism to improve solar cells. This could pave the way for more applications of this clean energy. Read also at Materials Today.

Source: TechXplore (5 March 2018)

URBAN DESIGN

5 Questions: Richard Plunz on Crowdsourcing Urban Design with Twitter

This interview focuses on a paradigm shifting idea on how social media can help us create a new generation of urban design and planning tools that allow for social and environmental resiliency in the design of urban spaces.

Source: Columbia University (2 March 2018)

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