

Weekly Discovery

We SHARE to inspire and ignite ideas!

16 April 2018 - 20 April 2018

ARCHITECTURE

The Future of Facades: How 3D Printing Is Revolutionising Architectural Restoration

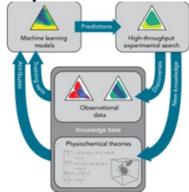


This article touches on the technologies that can be applied in bringing the forgotten craft of ornamental architecture into the modern age, which are cost effective and could save buildings from demolition.

Source: [The Independent](#) (15 April 2018)

ARTIFICIAL INTELLIGENCE

Accelerated Discovery of Metallic Glasses Through Iteration of Machine Learning and High-Throughput Experiments



AI algorithm that is able to identify a broad variety of new materials at a faster rate, as well as path dependent materials which are currently not easily predictable through physiochemical theories.

Source: [Science Advances](#) (13 April 2018)

ARTIFICIAL INTELLIGENCE

Researchers Teach AI to Think like a Dog and Find out What They Know About the World



Learning from animals using machine learning can provide a new source of training data for AI systems, which is useful for teaching robots. Also Learn more details from the [arxiv](#).

Source: [The Verge](#) (14 April 2018)

AVIATION

Supersonic Stealth Jets – How the Fifth Generation of Fighter Aircrafts Will Conquer the Skies



Get insights into the designs and technologies behind these supersonic stealth aircrafts f-22 Raptor and F-35 Lightning II.

Source: How It Works (Issue 110) Available @ SUTD Library (Call Number Q162 HOW)

DESIGN & HEALTHCARE

Healing in Time



The role of design in healthcare has become more significant and impactful. Read this article and explore how human beings are encouraged to take an active role towards health and wellness by these brilliant designs.

Source: Frame (Mar / Apr 2018) Available @ SUTD Library (Call Number NK1700 FRA)

EMPATHETIC TECHNOLOGY

TED 2018: Technology Reveals Fear and Other Emotions



Technology is reshaping and improving the way we understand how our brains work and how we are interacting and engaged with our surroundings through analysis of human heat signatures.

Source: [BBC News](#) (12 April 2018)

HOMES & BUILDINGS

Global Homes and Buildings (H&B) Industry Outlook, 2018

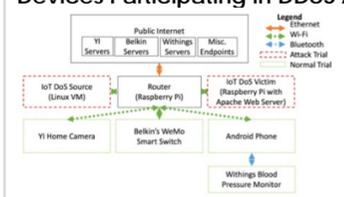


Disruptive technologies have been revolutionising the home and building industry. Check out the technology deployment and market trends to look out for in 2018.

Source: [Frost & Sullivan](#) (11 April 2018)

INTERNET OF THINGS

Real-Time Detection of Consumer IoT Devices Participating in DDoS Attacks



Researchers at Princeton University shared that machine learning can be leveraged to analyse distinctive IoT traffic behaviours so as to detect real-time consumer IoT attacks. Also read the detailed [study](#).

Source: [HelpNet Security](#) (16 April 2018)

MATERIALS SCIENCE

This Material Uses Energy from Ambient Light to Kill Hospital Superbugs



This new polymer-based material harnesses the power of ambient light to produce bacteria-killing molecules on surfaces that are prone to contamination. In addition, read about [a new coating material](#) that repels all kinds of liquids.

Source: [ScienceNews](#) (10 April 2018)

MOLECULAR PROGRAMMING

DNA Clock



For the first time researchers successfully created a DNA oscillator that can generate complex behaviours. This may pave the way for breakthroughs in synthetic biology.

Source: [Scientific American](#) (April 2018) Available @ SUTD Library (Call Number Q1 SCI)

OPTICS

3-D-Printed, Millimeter-Sized Lenses— in Four Hours

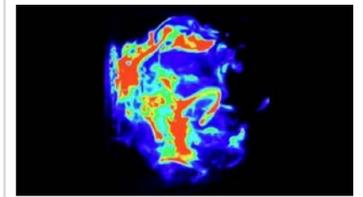


The world's fastest 3D printed high-quality lens measured 5mm thick and 3mm wide. The breakthrough entails prompt optics prototyping enabled by 3D printing would become more efficient. Read further at [Advanced Materials](#).

Source: [Optics & Photonics News](#) (12 April 2018)

PHYSICS

First Ever Combustion Experiment with X-Ray

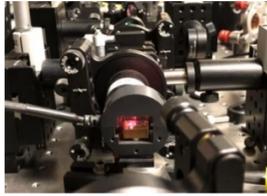


A historic discovery experiment in a gas turbine combustor using X-rays generated data that would help advance gas turbine engine designs for higher power density and efficiency.

Source: [Science Daily](#) (13 April 2018)

QUANTUM MECHANICS

This Quantum Random Number Generator Can Never Be Hacked



A new method was developed for generating numbers through quantum mechanics, which are guaranteed to be random and impossible to be hacked. Learn more about the method at [Nature](#).

Source: [LiveScience](#) (11 April 2018)

RENEWABLE ENERGY

The Global Trends in Renewable Energy Investment 2018

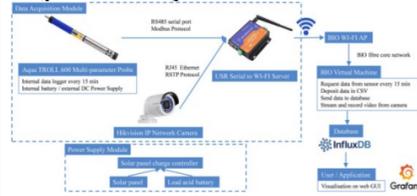


Among the various renewable energy investments, solar energy continues to take the lead with \$160.8 billion and China in pole position. This 86-page report provides key details on the renewable energy by sectors and regions.

Source: [Frankfurt School-UNEP Collaborating Centre](#) (2018)

SMART CITIES

Water Quality Monitoring in Smart City: A Pilot Project

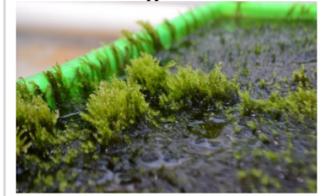


The research reveals a plug and play multi-parameter water quality monitoring system that is capable of collecting and displaying real-time high-frequency water quality data online and being integrated with smart city infrastructures.

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

WATER PROTECTION

Moss Capable of Removing Arsenic from Drinking Water Discovered



Do you know that the moss from northern Sweden can cleanse contaminated water within just 1 hour? Have a look into the components of the moss that make it special. Read also at [Environmental Pollution](#).

Source: [EurekAlert!](#) (16 April 2018)

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