

# Weekly Discovery

We SHARE to inspire and ignite ideas!

8 January 2018 - 12 January 2018



SPECIAL FEATURE

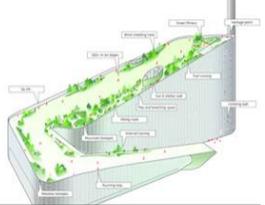
**BIOMIMICRY DESIGN**

According to the Biomimicry Institute, a sustainable world had already existed through the eco-system and biodiversity. It serves as an approach to research and innovations to continue the sustainability of our living and challenges. Biomimicry imitates nature's patterns, strategies and processes into new ways of sustainable living and it is an organic way of solving our daily problems that we grapple with. This reading list contains over 50 publications mainly published mostly in the last 10 years and aims to give insight to the various topics.

[DOWNLOAD](#)

ARCHITECTURE

**SLA Reveals Park and Ski Slope That Will Cap BIG's Groundbreaking Waste-To-Energy Plant**



Breaking out of the common boundaries and concept of landscape designing, this recreational park and ski slope is built on top of a working waste plant industrial building.

Source: [ArchDaily](#) (3 January 2018)

ARCHITECTURE

**Theme: Silence**



A special edition of photographs by architects and architectural students on how they define the term 'silence' from their perspectives. It can be a toilet, an auction place, or a church.

Source: [AArchitecture](#) (Issue 32)  
Available @ SUTD Library (Call Number NA1 AA)

AUTOMATION

**Your Next T-Shirt Will Be Made by a Robot**



A commendable interval of 22 seconds is all it takes for this robot. This innovation saves on the cost of manpower and lowers the price of a t-shirt to 33 US cents.

Source: [IEEE Spectrum](#) (5 January 2018)

AUTONOMOUS VEHICLES

**Nissan Is Working on Brain-To-Vehicle Technology**



This technology for autonomous vehicles can read the driver's brain signals, predict behaviours, monitor comfort, and adjust the drive to make it more pleasant.

Source: [The Drive](#) (4 January 2018)

BLOCKCHAIN

**Harnessing the Potential of Blockchain to Transform Education**



Image Source: Britannica

With data recorded on the blockchain, the immutable entry allows for degree/certificate security and easy verification of data. Also, read the European Commission's report [Blockchain in Education](#).

Source: [EurekAlert!](#) (5 January 2018)

CONFLICT

**Why We Should Be Disagreeing More at Work**



Agreeing is always easier than confronting. However, sometimes disagreements are inevitable. Can we agree to 'disagree' in the workplace?

Source: [Harvard Business Review](#) (3 January 2018)

CONSTRUCTION

**Global Digital Transformation on the Building and Construction Sector, Forecast to 2025**



This report covers the various challenges faced by the building and construction sector in digital transformation, case studies as well as market forecasts are presented

Source: [Frost & Sullivan](#) (5 January 2018)

FACADE

**A 3D Facade of 7,553 Tiles Wraps KIA's Experience Centre with Algorithmic Patterns**



Algorithms were employed in designing this eye-catching 3D facade, which presents a blend of patterns and colours. Factors like lighting and ventilation have also been well studied to ensure an innovative and dynamic output.

Source: [Design Boom](#) (9 January 2018)

FINANCIAL SYSTEMS

**Breaking the Bank**



A study of the evolution of currency over 5000 years till today's cryptocurrencies. It draws attention to Tradecoin, which has the potential to become the next universal digital currency. Also read about the [crypto craze of Bitcoin](#).

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

GLOBAL AFFAIRS

**Soft Power Survey**



What is soft power? It is the ability of a country to persuade others without force. In this annual survey on the top 25 nations, Singapore moved up to the 22<sup>nd</sup> in 2017 from the 23<sup>rd</sup> of 2016.

Source: [Monocle](#) (Dec 2017 / Jan 2018)  
Available @ SUTD Library (Call Number AP2 MON)

HEALTHCARE

**Purifying Cells to Treat Disease**



Introducing a new way of healing cells that outperforms the existing antibody treatments in terms of therapeutic outcomes.

Source: [Asia Research News](#) (2017)  
Available @ SUTD Library (Call Number Q180 ASI)

INTERNET OF THINGS

**IoT 2017 in Review: The 10 Most Relevant IoT Developments of the Year**

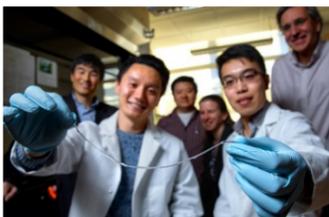


According to this [report](#) interest in IoT is increasing, however, 75% of IoT projects fail. Read on to learn more about the happenings in IoT in 2017. In addition, view [IoT Breakthrough Announces Winners of 2018 Awards Program](#).

Source: [IoT Analytics](#) (3 January 2018)

MEDICAL DEVICES

**Implant Containing Living Pancreatic Cells Controls Blood Sugar Without Insulin Injections**

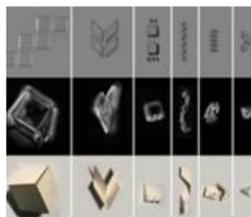


Researchers have developed an implantable device that generates insulin just like a normal pancreas using live stem cell-derived pancreatic cell clusters for Type I diabetes patients. In addition read more at [PNAS](#).

Source: [MedGadget](#) (8 January 2018)

NANOROBOTICS

**Physicists Build Muscle for Shape-Changing, Cell-Sized Robots**

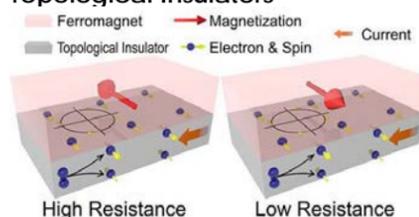


This micro-sized exoskeleton designed for electronics can change its shape based on thermal and chemical responses. Also read more at [PNAS](#).

Source: [Cornell University](#) (3 January 2018)

PHYSICS

**Researchers Demonstrate the Existence of a New Kind of Magnetoresistance Involving Topological Insulators**

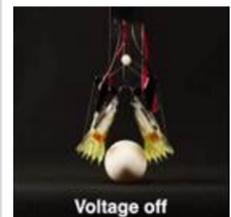


The new discovery involving topological insulators could potentially lead to enhancements in future computers, such as computer storage, improvements of low-power computing and memory for robots and more. Read more at [Nature](#).

Source: [Phys.org](#) (9 January 2018)

ROBOTIC ACTUATORS

**New Robot 'Muscles' Are Strong Enough to Lift a Baseball—and Nimble Enough to Pluck a Raspberry**



Researchers combined pneumatic and elastomer actuator technology to produce 'soft muscle' robots that can pick up items as delicate as a raspberry. Possible applications include prosthetic devices. Also read two Science publications: [Article 1](#) & [Article 2](#).

Source: [Science](#) (4 January 2018)

