

Weekly Discovery

We SHARE to inspire and ignite ideas!

12 December 2016 – 16 December 2016



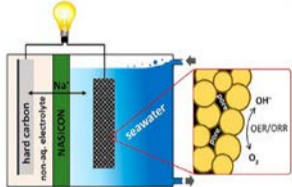
SPECIAL HIGHLIGHT
SMART CAMPUS

The development of smart campuses is an integral part of the vision of developing a smart city. One of the key areas of smart campus initiatives is smart education, which is a new concept of digital-enabled teaching and learning. There are a range of campus facilities that could be transformed into smart spaces to provide novel experience. To enhance the experience, a robust foundation of information and communications technology support is needed. Building a smart campus requires decision-makings that are coherent with sustainable and integrated urban solutions to achieve higher levels of engagement and productivity, rather than merely setting up high-tech infrastructures.

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BATTERY TECHNOLOGY

Groundbreaking new seawater battery could replace expensive lithium batteries



Discover a [seawater battery](#) that could make lithium-ion batteries a thing of the past. When seawater constantly flows into and out of the battery, there will be a steady supply of sodium (Na⁺) ions and water to generate a charge. More details at [ACS Applied Materials & Interfaces](#).

Source: [Inhabitat](#) (9 December 2016)

CYBERSECURITY

Here's How Cyber Attacks Get Worse in 2017

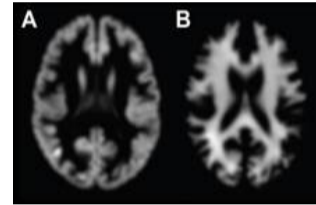


Have you ever thought about if AI would one day become a tool for hackers to create smart malware? Read the article to find out what cybersecurity challenges we are facing in 2017.

Source: [Venturebeat.com](#) (11 December 2016)

DEEP LEARNING

Deep-Learning Machine Uses MRI Scans to Determine Your Brain Age



Traditional MRI Scan takes 24 hours to crunch the raw data but using AI, one is able to determine the brain age within seconds, resulting in a much faster diagnosis. You can read more at [Cornell University Library](#).

Source: [MIT Technology Review](#) (12 December 2016)

ENERGY

'Nanogenerator' charges gadgets with your motions

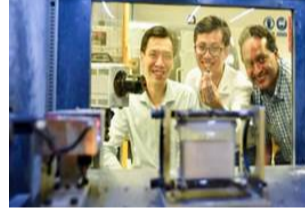


Imagine the energy derived from your movements can be used to charge your hand phone for a week. Researchers at Michigan State University developed a "nanogenerator" that allows devices to be powered by human motion. Read the findings in the journal [Nano Energy](#).

Source: [Futurity](#) (9 December 2016)

ENGINEERING

Sand absorbs high-speed ballistic impact better than steel



A research team from NUS found that sand has the ability to mitigate the energy exerted against it by more than 85%. Sand is a cheap and environment friendly material and has potential applications in construction and defence systems.

Source: [Phys.org](#) (9 December 2016)

INNOVATION

Paypal's CEO on creating products for undeserved markets



Paypal's CEO went through many experiences to understand the needs of customers such as being homeless for a day, working in sales, customer service and more. He used these experiences combined with consumer feedback and suggestions to formulate winning strategies and products.

Source: [Harvard Business Review](#) (December 2016)

LOCAL ARCHITECTURE

Ricky Gui Documents Over 600 Hidden Doors Around Singapore



Local commercial photographer Ricky Gui had taken 600 photographs of doors from the back lanes of the shophouses in Singapore. The varied design, shape and colour of the doors provides a different perspective to the overall surrounding architecture.

Source: [ArchDaily](#) (12 December 2016)

RETAIL AUTOMATION

Panasonic's smart shopping basket calculates your bill and bags your items

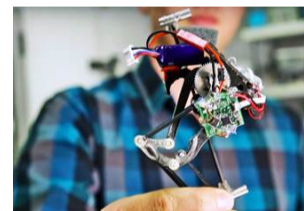


A new solution in which a shopping basket is able to detect the items you select at the supermarket, total up the amount and pack them into a bag. All these are done automatically and a staff is only required to collect the money at the checkout counter! Check out this [video](#) of it working.

Source: [The Verge](#) (12 December 2016)

ROBOTICS

See the Most Vertically Agile Robot Jump Around



SALTO, a tiny robot that can leap 1.75 m per second, has the highest robotic vertical jumping agility in the world and is expected to help out in search-and-rescue missions. Read more about SALTO at [Science Robotics](#).

Source: [Futurity](#) (12 December 2016)

SUSTAINABILITY

This shopping bag is made of tomato, tapioca, banana and corn



An Indian entrepreneur established a company called EnviGreen, which designs environmentally-friendly shopping bags. EnviGreen's shopping bags aim to reduce the pollution brought about by plastic shopping bags upon decomposition and this is a step towards a greener earth.

Source: [e27.co](#) (8 December 2016)

TRENDS IN CITIES

The future of cities



Enjoy this [18 minute short film](#) on the efforts to make cities more liveable. The filmmaker Oscar Boyston takes us on a journey through several cities through the globe in quest to get a view into what cities in the future might be like.

Source: [world-architects](#) (13 December 2016)

3D PRINTING

6 Next Gen 3D printing technologies that might change everything



Presenting new 3D printing technologies, all of which are expected to make 3D printing of higher quality and at a faster speed. They include the Continuous Liquid Interface Production (CLIP) 3D printing process, NanoParticle Jetting (NPJ) technology, carbon fibre 3D printing and Multi Jet Fusion (MJF) technology.

Source: [Engineering.com](#) (7 December 2016)