Weekly Discovery

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6 August 2018 - 10 August 2018

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AGEING
Over 85 and Exceptionally Healthy? Insights from the SG50 Longevity Cohort Study

"A multigenerational study of elderly Singaporeans is tackling an age-old question: how can we slow down the process of aging."

Source: Asian Scientist – The Aging Issue (Jul-Dec 2018)
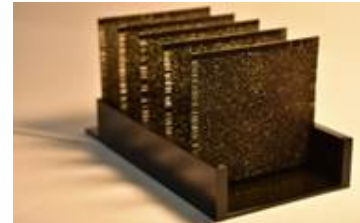Available @ SUTD Library (Call Number Q80 ASI)

ARCHITECTURE
2018 Innovative Architecture Award Winners

"Awards are given to visionary buildings, innovative products and sustainable communication in all sectors of architecture, the construction and real estate business and the manufacturing industries."
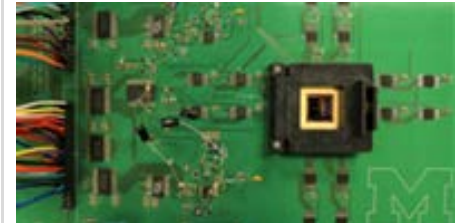
Source: Iconic World (6 August 2018)

ARTIFICIAL INTELLIGENCE
AI Device Identifies Objects at the Speed of Light

"A team of UCLA electrical and computer engineers has created a physical artificial neural network - a device modeled on how the human brain works - that can analyze large volumes of data and identify objects at the actual speed of light…"

Source: Science Daily (2 August 2018)

COMPUTER CHIP
Memory-Processing Unit Could Bring Memristors to the Masses

"A new way of arranging advanced computer components called memristors on a chip could enable them to be used for general computing, which could cut energy consumption by a factor of 100."

Source: University of Michigan (30 July 2018)

COMPUTER SCIENCE
Stanford Computer Scientists Develop a System to Synthesize Realistic Sounds for Computer Animation

"Informed by geometry and physical motion, the system figures out the vibrations of each object and how, like a loudspeaker, those vibrations excite sound waves. It computes the pressure waves cast off by rapidly moving and vibrating surfaces."

Source: Stanford (6 August 2018)

CYBERSECURITY
Cloud-, Blockchain-, and Machine Learning-Based Security Innovations

"This Cyber Security TOE provides a snapshot on emerging cyber security solutions … that help companies protect from threats, data breaches, phishing attacks, and defend against modern attacks."

Source: Frost & Sullivan (3 August 2018)

CYBERSECURITY
Hackers Target 3rd Dimension of Cyberspace: Users' Minds

"The Russian attacks on the 2016 U.S. presidential election and the country's continuing election-related hacking have happened across all three dimensions of cyberspace - physical, informational and cognitive…"

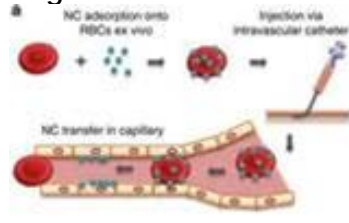Source: LiveScience (31 July 2018)

DIAGNOSTICS
New Blood Test for Brain Injuries Returns Instant Results

"A European team announced progress toward a quick, on-the-spot test for mild traumatic brain injuries (mTBIs) that requires only a drop of blood and can tell a patient within minutes whether they should have a CT scan or feel assured that there is no injury."

Source: IEEE Spectrum (3 August 2018)

DRUG DELIVERY
Red-Blood-Cell 'Hitchhikers' Offer New Way to Transport Drugs to Specific Targets

"A new drug-delivery technology which uses red blood cells to shuttle nano-scale drug carriers, called RBC-hitchhiking, has been found in animal models to dramatically increase the concentration of drugs ferried precisely to selected organs."

Source: MedicalXpress (1 August 2018)

MATERIALS SCIENCE
Harmful Dyes in Lakes, Rivers Can Become Colorless with New, Sponge-Like Material

"A team of researchers created a sponge-like material, left, from wood pulp and small bits of metal that can remove color from dyes in water within seconds."
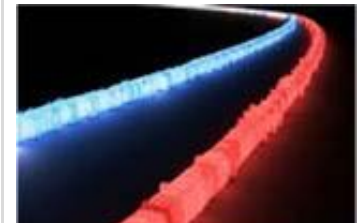
Source: Phys.org (1 August 2018)

MEDICAL DEVICES
TIGERTRIEVER 13, World's Smallest Clot Retriever for Strokes, Cleared in Europe

"… the narrowest clot retriever now available for use in treating ischemic stroke. The device can be used in vessels as small as 1 millimeter in width and up to a maximum of 2.5 mm, where larger retrievers would be appropriate."

Source: Medgadget (7 August 2018)

OPTICL FIBRE
On-Chip Optical Filter Provides Cheaper Alternative to "Broadband" Filters

"MIT researchers designed an optical filter on a chip that can process optical signals from across an extremely wide spectrum of light at once, something never before available to integrated optics systems that process data using light."

Source: SciTechDaily (1 August 2018)

RESEARCH
From Lectures to the Lab: Three Steps to Becoming an Undergraduate Researcher

"Participating in research gives students first-hand experience of a potential career path and provides graduate students and postdocs with important mentoring opportunities."

Source: Nature (30 July 2018)

ROBOTICS
Soft Multi-Functional Robots Get Really Small

"A new fabrication process enables the creation of soft robots at the millimeter scale with features on the micrometer scale as shown here with the example of a small soft robotic peacock spider with moving body parts and colored eyes and abdomens."

Source: Wyss Institute at Harvard University (6 August 2018)

TECHNOLOGY
When Technology Gets Ahead of Society

"New technologies can be unsettling for industry incumbents, regulators, and consumers, because norms and institutions for dealing with them don't yet exist. Interestingly, businesspeople in emerging economies face similar challenges: The rules are unclear and infrastructure is lacking."

Source: Harvard Business Review (Jul / Aug 2018)

TRAFFIC MANAGEMENT
Set Road Charges in Real Time to Ease Traffic

"Traffic jams cost us time, money and health. In 2016, the average US driver spent 42 hours in congestion during peak hours, and those in Los Angeles, California, spent 104 hours…"

Source: Nature (31 July 2018)