

Weekly Discovery

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14 OCTOBER 2019 - 18 OCTOBER 2019

The Library publishes **9 alerts** focusing on Topics relevant to **growth and research areas** to SUTD.

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Artificial Intelligence & Data Science	Aviation	Cities
HealthCare	Robotics & Automation	Design & Innovation
Cybersecurity	Digital Design & Fabrication	Advanced Manufacturing

AI & RETAIL
Global Artificial Intelligence in Retail—Use Cases and Transformational Impact, 2019

"Retail has entered a new era where eCommerce and technology bellwethers like Alibaba, Amazon, Apple, Baidu, Facebook, Google, Microsoft, and Tencent have raised consumers' expectations. AI is enabling automated decision-making with accuracy and speed, based on data analytics, coupled with self-learning abilities."

Source: [Frost & Sullivan](#) (10 October 2019)

ARCHITECTURE
Shigeru Ban Is Changing the Priorities of Architecture

"Rather than going from one high-profile commission to the next, the architect has an alternative focus: designing shelters for the displaced."

Source: [The New York Times](#) (15 October 2019)

BATTERIES
Calcium Batteries: New Electrolytes, Enhanced Properties

"Calcium-based batteries promise to reach a high energy density at low manufacturing costs. This lab-scale technology has the potential for replacing lithium-ion technology in future energy storage systems."

Source: [Karlsruhe Institute of Technology \(KIT\)](#) (15 October 2019)

CARBON CAPTURE
New Material Captures Carbon Dioxide

"A new material that can selectively capture carbon dioxide (CO₂) molecules and efficiently convert them into useful organic materials has been developed by researchers ... They describe the material in the journal [Nature Communications](#)."

Source: [Institute for Integrated Cell-Material Sciences](#) (11 October 2019)

CHEMISTRY
ION the Prize: The 2019 Nobel Prize in Chemistry

"The story of the lithium-ion battery tells much about the increasingly global nature of innovation ... Their work consisted of ransacking the periodic table of elements to find combinations of materials that produced a cheap, durable, and safe battery."

Source: [IEEE Spectrum](#) (11 October 2019)

CLIMATE
Fighting Climate Change with New Data

"Our [Environmental Insights Explorer \(EIE\)](#) is a free online tool that makes it easier for cities to measure, plan and reduce overall carbon emissions and pollution across their cities ... This data can then help build policies, guide solutions and measure progress."

Source: [Google](#) (10 October 2019)

DIGITAL DESIGN
Best Architecture Software of 2019: Digital Design for Buildings and Models

"Here then we'll look at the best architecture software on the market, and include some additional options worth considering."

Source: [TechRadar](#) (11 October 2019)

ELECTRONICS
Creating 2D Heterostructures for Future Electronics

"New research integrates nanomaterials into heterostructures, an important step toward creating nanoelectronics."

Source: [Science Daily](#) (11 October 2019)

INNOVATION
What Top Innovation Leaders in Banking Have in Common

"What do the most innovative leaders in banking have in common? According to the Digital Banking Report's 'Innovation in Retail Banking', they generate greater profits and higher satisfaction scores by leveraging new technologies and advanced analytics."

Source: [The Financial Brand](#) (10 October 2019)

LANDSCAPE ARCHITECT
Architect, Critic and Maggie's Centres Co-Founder Charles Jencks Dies at 80

"I explore metaphors that underlie both growing nature and the laws of nature, parallels that root us personally in the cosmos as firmly as a plant, even while our mind escapes this home."

Source: [Dezeen](#) (15 October 2019)

MEDICAL DEVICES
First Smart Speaker System That Uses White Noise to Monitor Infants' Breathing

"... the smart speaker plays white noise and records how the noise is reflected back to detect breathing motions of infants' tiny chests. When the researchers tested BreathJunior with five babies in a local hospital's neonatal intensive care unit, it detected respiratory rates that closely matched the rates detected by standard vital sign monitors."

Source: [EurekAlert!](#) (15 October 2019)

MEGALOPOLIS
Megalopolis: How Megaregions Are Changing the Global Economy

"This report identifies world's megalopolises, measures their economic might and provides a few insights into how infrastructure plans and economic development policies are being directed to improve regional integration."

Source: [Euromonitor](#) (September 2019)

OPEN INNOVATION
Four Skills for Successful Open Innovation

"Introspection, extrospection, technical ability and interaction skills are critical for implementing effective open innovation strategies in organizations."

Source: [Asian Scientist](#) (11 October 2019)

ORGANIC MATTER
Concrete Doped with Microbes Gains Durability

"The researchers noted that *B. subtilis* natto is resistant to unfavorable environmental conditions, including salinity and extreme pH, making them ideal for embedding within concrete."

Source: [Asian Scientist](#) (10 October 2019)

ROBOTICS
Researchers Build a Soft Robot with Neurologic Capabilities

"In work that combines a deep understanding of the biology of soft-bodied animals such as earthworms with advances in materials and electronic technologies, researchers from the United States and China have developed a robotic device containing a stretchable transistor that allows neurological function."

Source: [University of Houston](#) (14 October 2019)

SENSORS
Sensor Innovations Driving IoT: Opportunity Analysis

"The Root Sense solution is solar-powered, alleviates the need for maintenance, provides multiple depths (with a maximum depth of about 150 cm), and can work with diverse types of soil and water."

Source: [Frost & Sullivan](#) (9 October 2019)