Weekly Discovery

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29 APRIL 2019 - 3 MAY 2019

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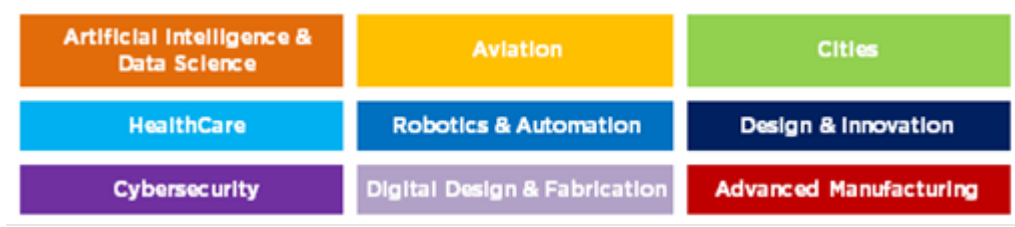
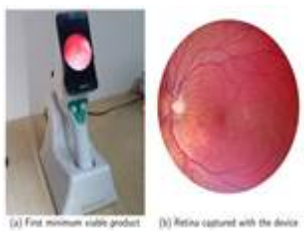


AI & HEALTHCARE

A Data-Driven Approach to Referable Diabetic Retinopathy Detection

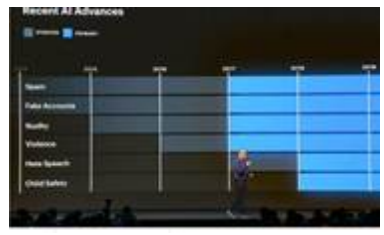


"Detecting early signals of diabetic retinopathy is critical for limiting its progression … data-driven approaches that extract powerful abstract representations directly from retinal images to provide a reliable referable diabetic retinopathy detector."

Source: Artificial Intelligence in Medicine (May 2019)

ARTIFICIAL INTELLIGENCE

Facebook Says Its New AI Tech Spots Hate Speech Faster



"Self-supervised learning lets AI adapt faster so Facebook can spot things like hate speech sooner, the company says. It's being used for video, text and photos, too."

Source: CNET (1 May 2019)

ARTIFICIAL INTELLIGENCE

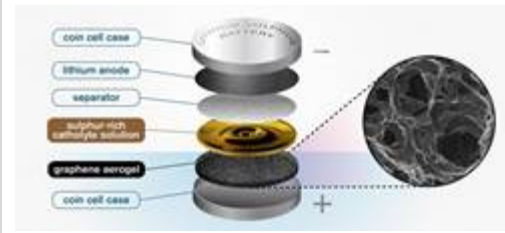
Singapore to Offer World's Fastest Patent Application-To-Grant for AI Inventions

"The Intellectual Property Office of Singapore (IPOS) is to fast-track artificial intelligence (AI)-related patent applications to push the Republic's efforts to develop its digital economy."

Source: The Straits Times (26 April 2019)

BATTERIES

Graphene Sponge Helps Lithium Sulphur Batteries Reach New Potential

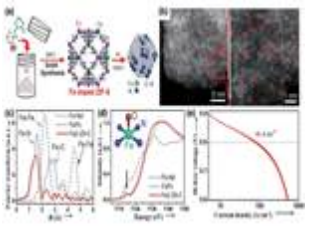


"Researchers at Chalmers University of Technology, Sweden, recently unveiled a promising breakthrough for this type of battery, using a catholyte with the help of a graphene sponge."

Source: EurekAlert! (29 April 2019)

CHEMISTRY

Fe-N-C Catalysts for PEMFC: Progress Towards the Commercial Application Under DOE Reference



"Proton exchange membrane fuel cells have attracted much attention because of their high energy conversion efficiency, high power density and zero emission of pollutants … In this review, the major breakthroughs of Fe-N-C catalysts are outlined …"

Source: Journal of Energy Chemistry (December 2019)

CLOUD COMPUTING

Towards Hybrid Multi-Cloud Storage Systems: Understanding How to Perform Data Transfer

"… storing and retrieving information over the Cloud is critical for the survival and growth of organizations and people ..."

Source: Big Data Research (July 2019)

DRONES

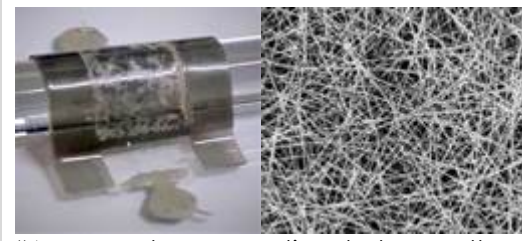
Drone Delivery Services Are Actually, Finally Almost Here

"Together, these announcements - a mix of regulatory, logistical, and technological successes - suggest that a future of personal airborne deliveries might not be too far away. "There have been some very exciting announcements recently ..."

Source: Wired (27 April 2019)

ELECTRONICS

Flexible Circuits for 3D Printing



"A research cooperation between the University of Hamburg and DESY has developed a process suitable for 3D printing that can be used to produce transparent and mechanically flexible electronic circuits."

Source: DESY (26 April 2019)

MANUFACTURING

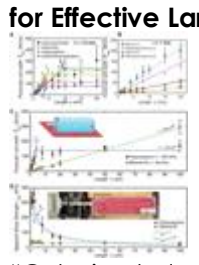
Industrial Manufacturing Trends 2019

"Many industrial manufacturing companies have not implemented digital tools across their business lines that would give them a low cost and lean operating environment flexible enough to respond quickly to geopolitical and global economic challenges."

Source: PWC (May 2019)

MATERIALS SCIENCE

Low–Interfacial Toughness Materials for Effective Large-Scale Deicing



"Golovin et al. compared strength-limited deicing with toughness-limited deicing. Whereas normal deicing materials focus on minimizing the adhesion strength, the authors show that if a material is designed with low-adhesion toughness, deicing is no longer a function of the coverage area."

Source: Science (26 April 2019)

NANOFIBRE

This Injectable Gel Could One Day Rebuild Muscle, Skin, and Fat

"Now, researchers have developed a nanofiber-reinforced injectable gel that can rebuild missing muscle and connective tissues by serving as a scaffold and recruiting the body's wound-healing cells. So far, the team has tested the material only in rats and rabbits."

Source: Science (1 May 2019)

NEW MATERIAL

New Polymer Films Conduct Heat Instead of Trapping It

"Engineers have flipped the picture of the standard polymer insulator, by fabricating thin polymer films that conduct heat - an ability normally associated with metals."

Source: Science Daily (29 April 2019)

PRODUCT DESIGN

How Origami Is Revolutionizing Industrial Design

"Scientists and engineers are finding practical applications for the Japanese art form in space, medicine, robotics, architecture and more."

Source: Smithsonian Magazine (23 April 2019)

SUSTAINABILITY

Could We Re-Engineer A/Cs to Help Battle Climate Change?

"Imagine the renewable-electricity-powered air conditioning system in your house, apartment or office at work, besides functioning for cooling and heating, being adapted to capture carbon dioxide and water from the air."

Source: Popular Mechanics (30 April 2019)

TECHNOLOGY

Non-Thermal Plasma: New Technology Could Kill 99.9% of the Deadly Germs in the Air

"Now a new study suggests that non-thermal plasma – a cool gas made up of electrically charged particles, despite having no overall charge – could inactivate airborne viruses and provide sterile air."

Source: The Conversation (29 April 2019)

URBAN DESIGN

City Trees Can Offset Neighbourhood Heat Islands, Concordia Researcher Says

"Ziter argues that there is a non-linear relationship between canopy cover and temperature reduction: when canopy cover reaches a certain threshold, temperatures will begin to drop far more dramatically than they do below that point."

Source: Concordia University (25 April 2019)

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