Weekly Discovery

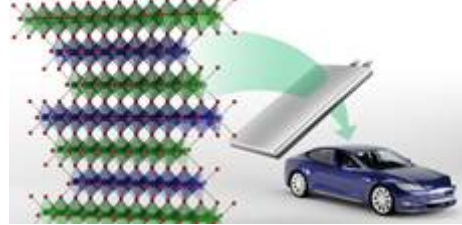## We SHARE to inspire and ignite ideas!

21 - 25 Dec 2020

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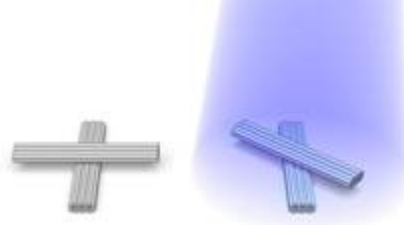|		
Artificial Intelligence & Data Science	Aviation	Cities
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Cybersecurity	Digital Design & Fabrication	Advanced Manufacturing

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CLEAN ENERGY

New Class Of Cobalt-Free Cathodes Could Enhance Energy Density Of Next-Gen Lithium-Ion Batteries

researchers have developed a new family of cathodes with the potential to replace the costly cobalt-based cathodes typically found in today's lithium-ion batteries that power electric vehicles and consumer electronics.

Source: Oak Ridge National Laboratory (18 Dec 2020)

DNA NANOTECHNOLOGY

Tiny Origami Controlled By Light

Using light to tune the configuration of the DNA origami is appealing because light is easy to control and can be done remotely. Read more in Wiley Online Library.

Source: Aalto University (18 Dec 2020)

DRONES

Make Drones Sound Less Annoying By Factoring In Humans At The Design Stage

"These days, almost everyone has either flown a drone or listened to the nasty whining sound they produce. Although small … they produce a high pitched noise—which people tend to find very annoying."
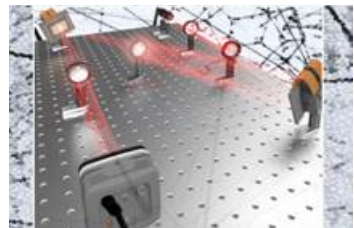
Source: TechXplore (21 Decr 2020)

INNOVATION

How Amazon Thinks About Competition

The most important factor for nimbleness is decision-making speed. The second-most important factor is being willing to be experimental. You have to be willing to take risks. You have to be willing to fail, and people don't like failure.

Source: Harvard Business Review (21 Dec 2020)

MACHINE LEARNING

Developing Smarter, Faster Machine Intelligence With Light

"This innovation, which harnesses the massive parallelism of light, heralds a new era of optical signal processing for machine learning with numerous applications, including in self-driving cars, 5G networks, data-centers, biomedical diagnostics, data-security and more."

Source: GEORGE WASHINGTON UNIVERSITY (18 Dec 2020)

MACHINE LEARNING

Machine Learning Boosts the Search for New "Superhard" Materials

"Superhard materials are in high demand in industry, from energy production to aerospace, but finding suitable new materials has largely been a matter of trial and error based on classical materials such as diamonds. Until now."

Source: SciTechDaily (20 Dec 2020)

MATERIALS

Silica The Best Environmental Alternative To Plastic Microbeads, Finds Study

"Following bans on plastic microbeads in wash-off cosmetics, a new study weighs up the environmental costs of alternatives."
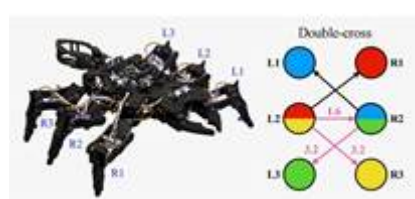
Source: Imperial College (14 Dec 2020)

OUTLOOK

Predictions 2021

"The business landscape has fundamentally shifted. Success in 2021 will depend on firms' willingness and ability to harness disruption and drive meaningful change. Read our Predictions Guide to learn how to meet the moment and thrive."

Source: FORRESTER (2020)

ROBOTICS

'Chaotic' Way To Create Insectlike Gaits For Robots

"Researchers are embracing chaos and nonlinear physics to create insectlike gaits for tiny robots -- complete with a locomotion controller to provide a brain-machine interface. Biology and physics are permeated by universal phenomena fundamentally grounded in nonlinear physics, and it inspired the researchers' work. The group now describes using a system of three nonlinear differential equations as a building block for central pattern generators to control the gait of a robotic insect."

Source: Science Daily (15 Dec 2020)

STARTUP

This Under 30 Alum Can Take High Resolution Satellite Images Through The Clouds

They're collected using a technique called synthetic aperture radar (SAR), in which the satellite uses its flight path to simulate a giant radar antenna, which enables images of the Earth's surface to be taken.

Source: Forbes (20 Dec 2020)

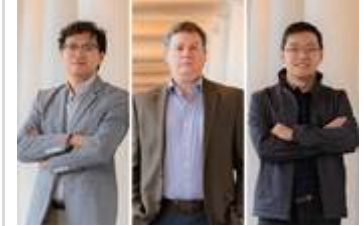
TECHNOLOGY

New Technology Could Charge Evs While Driving

"Researchers plan to explore the possibility of charging electric vehicles (EVs) while they are driving through wireless inductive technology placed under the road surface."

Source: Air Quality News (17 Decr 2020)

TECHNOLOGY

Research Breakthrough Could Transform Clean Energy Technology

"The technology necessary to convert sunlight into electricity has developed rapidly, but inefficiencies in the storage and distribution of that power have remained a significant problem... However, a breakthrough by researchers …could eliminate a critical obstacle from the process – a discovery that represents a giant stride toward a clean-energy future."

Source: News Virginia (18 Dec 2020)

TREND REPORT

Fjord Trends 2021

This 14th annual Fjord Trends report, highlights designers' predictions on seven emerging trends that will shape design, technology and business.

Source: Accenture (20 Decr 2020)

VACCINE BREAKTHROUGH

Shots of Hope

Never before have researchers so quickly developed so many experimental vaccines against the same foe. Never before have so many competitors collaborated so openly and frequently.

Source: Science (18 Dec 2020)

WEARABLES

High-Five Or Thumbs-Up? New Device Detects Which Hand Gesture You Want To Make

"The new device can recognize hand gestures based on electrical signals detected in the forearm. The system, which couples wearable biosensors with artificial intelligence (AI), could one day be used to control prosthetics or to interact with almost any type of electronic device."

Source: UNIVERSITY OF CALIFORNIA - BERKELEY (21 Dec 2020)

WEARABLES

Using Wearable Activity Trackers To Distinguish COVID-19 From Flu

"There's potential to use wearable sensors and smartphones as high frequency/low-sensitive tests to shorten the time of detection and awareness of a possible ongoing infection."

Source: Eurekalert! (21 Dec 2020)