SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

Weekly Discovery

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1 – 5 November 2021

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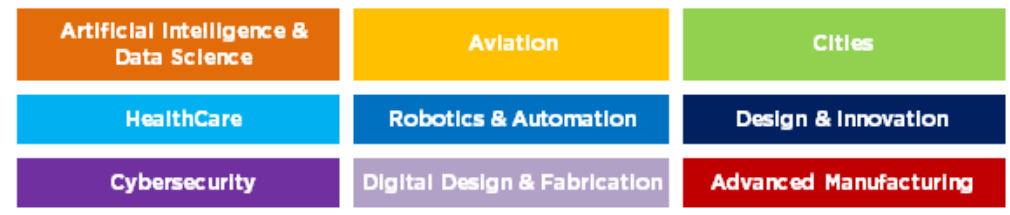
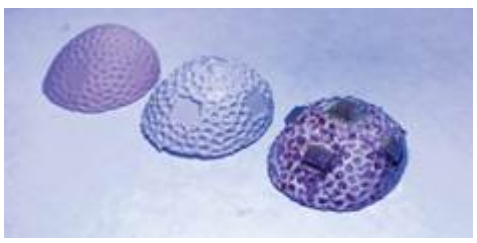


3D PRINTING

3D Printing Frames A Restoration For Coral

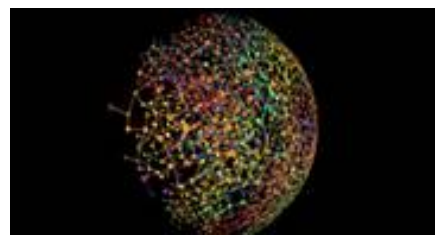


"Coral restoration could become easier and quicker with the use of 3D printing. As the technology matures, it could be used to rapidly and reliably create support structures for corals to grow on."

Source: KAUST (1 November 2021)

ARTIFICIAL INTELLIGENCE

COVID-19: Managing Supply Chain Risk And Disruption

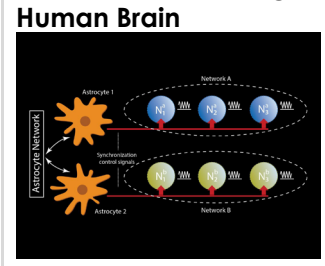


"This piece from Deloitte Canada highlights short-term actions companies can take to respond to business disruption and supply chain challenges from the global spread of COVID-19 — and looks ahead to the longer-term solution of digital supply networks."

Source: Deloitte(2021)

ARTIFICIAL INTELLIGENCE

Key To Resilient Energy-Efficient AI/Machine Learning May Reside In Human Brain

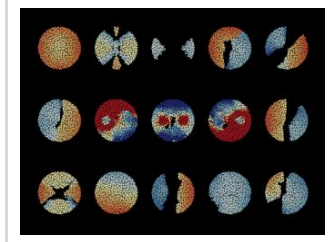


"A clearer understanding of how a type of brain cell known as astrocytes function and can be emulated in the physics of hardware devices, may result in artificial intelligence (AI) and machine learning that autonomously self-repairs and consumes much less energy than the technologies currently do."

Source: Penn State University (1 November 2021)

ARTIFICIAL INTELLIGENCE

Solving Complex Learning Tasks In Brain-Inspired Computers

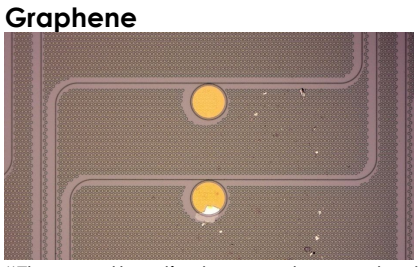


"Spiking neural networks, which mimic the structure and function of a natural nervous system, represent promising candidates because they are powerful, fast, and energy-efficient. One key challenge is how to train such complex systems."

Source: Universitat Heidelberg (29 October 2021)

GRAPHENE

Researchers Move Closer to Controlling Two-dimensional Graphene



"The results relied on a cleaner technique to manipulate the flow of electricity, giving graphene greater conductivity than metals such as copper and gold, and raising its potential for use in telecommunications systems and quantum computers."

Source: Columbia University (1 November 2021)

IMAGING

Noninvasive Imaging Strategy Detects Dangerous Blood Clots In The Body

"Investigators have developed and tested a targeted contrast agent that can detect blood clots in the hearts of patients with atrial fibrillation, or an irregular heartbeat.

The strategy could be used to find clots in other parts of the body as well, such as in vessels that, when blocked, can lead to stroke.."

Source: Massachusetts General Hospital (1 November 2021)

MANUFACTURING

Engineers Invent Ultra-Fast Manufacturing Technology, Eliminating Need For Polymer Binders

"A team of engineers at the University of South Florida has invented new technology that could forever change the manufacturing of wearable, electronic sensors. They've figured out a way to speed up production without having to use polymer binders – the industry standard in printing flexible sensors, which are often used to monitor vital signs in health care settings."

Source: UNIVERSITY OF SOUTH FLORIDA (USF INNOVATION) (1 November 2021)

MATERIALS

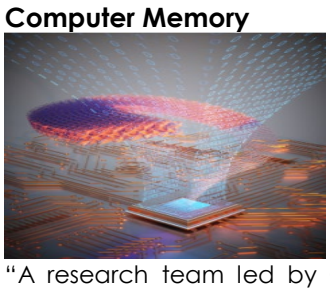
Physicists Discover How Particles Self-Assemble

"A team of physicists has discovered how DNA molecules self-organize into adhesive patches between particles in response to assembly instructions. Its findings offer a "proof of concept" for an innovative way to produce materials with a well-defined connectivity between the particles."

Source: NYU (1 November 2021)

MATERIALS

Researchers Discover Predictable Behavior in Promising Material for Computer Memory

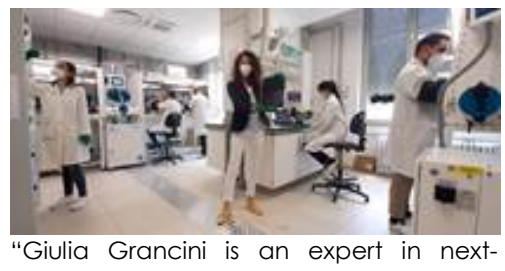


"A research team led by Georgia Tech researchers has discovered unexpectedly familiar behavior in the antiferroelectric material known as zirconium dioxide, or zirconia."

Source: Georgia Tech (1 November 2021)

SOLAR

In Search Of New Solutions For Cheap And Stable Solar Cells



"Giulia Grancini is an expert in next-generation photovoltaic materials. She speaks to Margaret Harris about her research on hybrid perovskite solar cells and the "golden triangle" of efficiency, stability and cost."

Source: Physics World (1 November 2021)

SUSTAINABILITY

Five Ways Innovation Is Shaping the Executive Sustainability Agenda

"Talk is cheap. True innovators in sustainability are going beyond promises to pioneer ways of building a better world and a stronger company at the same time."

Source: Bain & Company (21 October 2021)

VISION

New Technology Gives Smart Cars 'X-Ray' Vision, Detecting Hidden Pedestrians, Cyclists

"The autonomous vehicle uses game changing technology that allows it to "see" the world around it, including using x-ray style vision that penetrates through to pedestrians in blind spots and to detect cyclists obscured by fast-moving vehicles."

Source: Eurekalert! (1 November 2021)

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