SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

Weekly Discovery

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5 Oct – 9 Oct 2020

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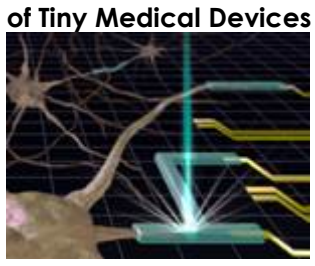
3D PRINTING

New Method of 3D-Printing Soft Materials Could Jump-Start Creation of Tiny Medical Devices for the Body



Using a 3D printer to fabricate an object made of gel is a "bit more of a delicate cooking process," … In the standard method, the 3D printer chamber is filled with a soup of long-chain polymers — ...

Source: SciTechDaily (5 October 2020)

3D PRINTING

These 3D-Printed Igloos Could Take Us One Step Closer To Life On The Moon

"To figure out what exactly this 3D printer can and should build on the moon, Icon has announced a partnership with SEArch+, an architecture firm that has worked with NASA on human-centered designs for space exploration, and the Bjarke Ingels Group, one of the world's most prominent architecture firms."

Source: Fast Company (1 October 2020)

ARCHITECTURE

World Architecture Day: Designing for the Future of the Human Habitat

To mark this occasion, ArchDaily's curators and editors decided to pick a series of articles that capture the major challenges and trends that are shaping the built environment around the world.

Source: Arch Daily (6 Oct 2020)

BIOENGINEERING

Flexible And Biodegradable Electronic Blood Vessels

"The research, published October 1 in the journal Matter, could overcome the limitations of conventional tissue engineered blood vessels (TEBVs), which serve as passive scaffolds, by coordinating with other electronic devices to deliver genetic material, enable controlled drug release, and facilitate the formation of new endothelial blood vessel tissue."

Source: Eurekalert! (1 October 2020)

BRAIN-COMPUTER INTERFACE

Are You Ready for Tech That Connects to Your Brain?

"As wearable technology becomes commonplace in our daily lives, there's an even more intimate connection on the horizon with the rise of the brain-computer interface (BCI)."

Source: Harvard Business Review (28 September 2020)

DEEP LEARNING

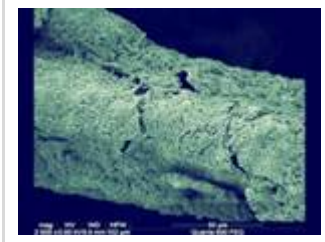
This Japan Startup Is Using Deep Learning To Detect Early-Stage Cancer In Blood Samples

"In addition to massive computational resources, high-quality data is indispensable for the high-precision deep learning computations needed to create an accurate screening system," says Abe Motoki, a bioinformatics engineer at Preferred Networks. Abe is in charge of developing a predictive model using deep learning.

Source: Forbes(30 Sep 2020)

ENGINEERING

Lighting The Path To Recycling Carbon Dioxide



Semiconductive photocatalysts that efficiently absorb solar energy could help reduce the energy required to drive a bioelectrochemical process that converts CO_2 emissions into valuable chemicals..

Source: EurekAlert! (5 October 2020)

IMAGING

A Multishot Lensless Camera In Development Could Aid In Disease Diagnosis

Researchers at Penn State are developing a new type of imaging that does not require a lens and uses reconfigurable particle-based masks to take multiple shots of an object. Read more in ACS Publications.

Source: National Science Foundation (1 Oct 2020)

MATERIAL SCIENCE

Squeezing Light Inside Memory Devices Could Help Improve Performance

Researchers have developed a method to 'squeeze' visible light in order to see inside tiny memory devices.

Source: Technology.Org (5 October 2020)

NANOSTRUCTURE

'Like A Fishing Net,' Nanonet Collapses To Trap Drug Molecules

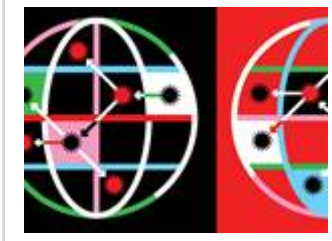
"Northwestern University researchers are casting a net for nanoparticles.

The team has discovered a new, rapid method for fabricating nanoparticles from a simple, self-assembling polymer. The novel method presents new possibilities for diverse applications, including water purification, diagnostics and rapidly generating vaccine formulations, which typically require many different types of molecules to be either captured or delivered at the same time."

Source: Northwestern University (5 October 2020)

PANDEMIC

Here's How We Prepare for the Next Pandemic



"If we keep developing the tech that has been supercharged for COVID-19, it never has to be this bad again."

Source: IEEE(30 September 2020)

ROBOTICS

How Toyota Research Envisions the Future of Robots

TRI CEO Gill Pratt says the plan is to create robots for amplifying, rather than replacing, human beings.

Source: IEEE Spectrum (1 October 2020)

STRAIN ENGINEERING

Turning Diamond Into Metal

"Researchers have discovered a way to transform the electronic properties of nanoscale needles of diamond… The research, though still at an early proof-of-concept stage, may open up a wide array of potential applications, including new kinds of broadband solar cells, highly efficient LEDs and power electronics, and new optical devices or quantum sensors, the researchers say."

Source: MIT (5 October 2020)

SUSTAINABILITY

New Enzyme Cocktail Digests Plastic Waste Six Times Faster

"The scientists who re-engineered the plastic-eating enzyme PETase have now created an enzyme 'cocktail' which can digest plastic up to six times faster…A second enzyme, found in the same rubbish dwelling bacterium that lives on a diet of plastic bottles, has been combined with PETase to speed up the breakdown of plastic."

Source: University of Portmouth (28 September 2020)

TECHNOLOGY

Evaluating New Technology? You're More Biased Than You May Realize

"Unconscious ideas about new technology can lead to poor investment decisions."

Source: MIT Sloan (23 September 2020)

TECHNOLOGY

Robots Save Us Time — But Do They Make Us Happier?

Our research also found that happiness is impeded if the use of autonomous products is perceived as an indication of laziness. In many cultures, busyness is seen as a status symbol. This mentality prevents people from asking for more time on adjustable deadlines at work, taking all of their paid vacation, and spending money to save time.

Source: Harvard Business Review (5 Oct 2020)

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