

Weekly Discovery

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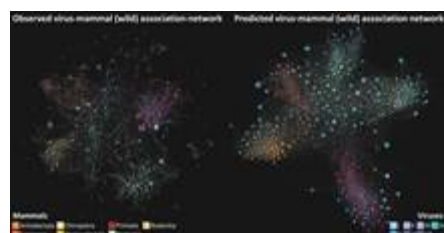
28 June – 2 July 2021

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Artificial Intelligence & Data Science	Aviation	Cities
HealthCare	Robotics & Automation	Design & Innovation
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AI
AI Used To Predict Unknown Links Between Viruses And Mammals



"Researchers have used a form of artificial intelligence (AI) called machine-learning to predict more than 20,000 unknown associations between known viruses and susceptible mammalian species. The findings, which are published in Nature Communications, could be used to help target disease surveillance programmes."

Source: [EurekaAlert!](#) (25 June 2021)

ARTIFICIAL INTELLIGENCE
AI May Soon Predict How Electronics Fail



"Neogi and her colleagues mapped out the physics of small building blocks made up of atoms, then used machine learning techniques to estimate how larger structures created from those same building blocks might behave. It's a bit like looking at a single Lego brick to try to predict the strength of a much larger castle."

Source: [CU Boulder](#) (21 June 2021)

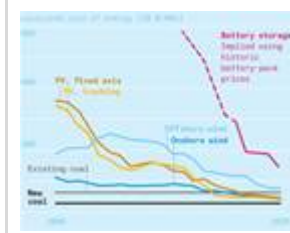
AUTOMATION
Robots And Your Job: How Automation Is Changing The Workplace



"A new survey-based study explains how automation is reshaping the workplace in unexpected ways. Robots can improve efficiency and quality, reduce costs, and even help create more jobs for their human counterparts. But more robots can also reduce the need for managers."

Source: [WEF](#) (24 June 2021)

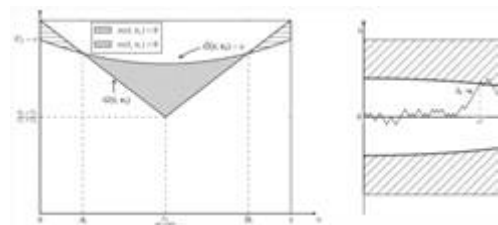
CLIMATE CHANGE
Engineers: You Can Disrupt Climate Change



"Decarbonization, carbon capture, and solar-radiation management will provide work for decades to come."

Source: [IEEE](#) (28 June 2021)

ECONOMICS
Learning To Hesitate



"We investigate how people make choices when they are unsure about the value of the options they face and have to decide whether to choose now or wait and acquire more information first. We show that this pattern can be explained as naturally emerging from Fechner cognitive errors."

Source: [Experimental Economics](#) (22 June 2021)

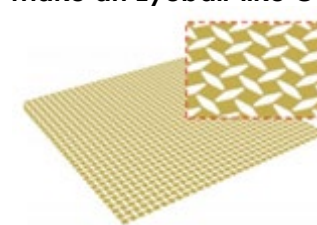
HEALTHTECH
First-ever Transient Pacemaker Harmlessly Dissolves in Body



"Researchers at Northwestern and George Washington universities (GW) have developed the first-ever transient pacemaker — a wireless, battery-free, fully implantable pacing device that disappears after it's no longer needed."

Source: [Northwestern University](#) (28 June 2021)

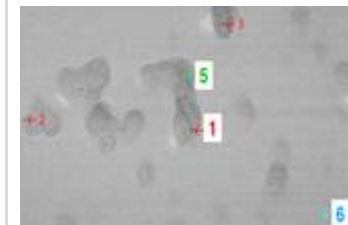
IMAGING SENSOR
Using the Ancient Art of Kirigami to Make an Eyeball-like Camera



"The curvy camera, like a human eyeball, on the other hand, can work with a single lens while correcting aberrations and offering other merits, such as a wide field of view and compact size."

Source: [University of Houston](#) (28 June 2021)

MATERIALS
A Way To Surmount Supercooling



"Researchers study the conditions under which aqueous solutions in a supercooled state rapidly freeze, and find certain nanoparticles stimulate crystallization to clathrate hydrates, which may lead to new energy storage methods and higher purity materials."

Source: [OSAKA UNIVERSITY](#) (22 June 2021)

MATERIALS
Pop-Up Coffee Table — No Assembly Required



"By harnessing the mechanical instabilities in curved beams, the system can transform objects into elaborate and customizable 3D configurations on a range of scales, from large-scale furniture to small medical devices."

Source: [Harvard School of Engineering](#) (28 June 2021)

PHYSICS
Physicists Bring Human-Scale Object To Near Standstill, Reaching A Quantum State



"To the human eye, most stationary objects appear to be just that — still, and completely at rest. Yet if we were handed a quantum lens, allowing us to see objects at the scale of individual atoms, what was an apple sitting idly on our desk would appear as a teeming collection of vibrating particles, very much in motion... Now for the first time, scientists at MIT and elsewhere have cooled a large, human-scale object to close to its motional ground state."

Source: [MIT](#) (18 June 2021)

REMOTE SENSING
Scientists Detect Signatures Of Life Remotely



"It could be a milestone on the path to detecting life on other planets: Scientists under the leadership of the University of Bern and of the National Centre of Competence in Research (NCCR) PlanetS detect a key molecular property of all living organisms from a helicopter flying several kilometers above ground. The measurement technology could also open up opportunities for remote sensing of the Earth."

Source: [BERN](#) (18 June 2021)

SENSOR TECHNOLOGY
New Face Mask Prototype Can Detect Covid-19 Infection



"The sensor technology could also be used to create clothing that detects a variety of pathogens and other threats."

Source: [MIT](#) (28 June 2021)

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