

Weekly Discovery

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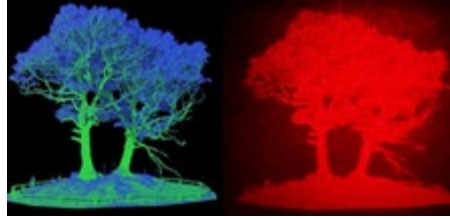
26 - 30 April 2021

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Artificial Intelligence & Data Science	Aviation	Cities
HealthCare	Robotics & Automation	Design & Innovation
Cybersecurity	Digital Design & Fabrication	Advanced Manufacturing

3D HOLOGRAPHIC DISPLAY 3D Holographic Head-Up Display Could Improve Road Safety



"Researchers have developed the first LiDAR-based augmented reality head-up display for use in vehicles. Tests on a prototype version of the technology suggest that it could improve road safety by 'seeing through' objects to alert of potential hazards without distracting the driver."

Source: [University of Cambridge](#) (26 April 2021)

3D PRINTING Energy-Saving Gas Turbines From The 3D Printer



"Now a research team has succeeded in using neutrons from the Technical University of Munich (TUM) research neutron source reactor for non-destructive detection of this internal stress – a key achievement for the improvement of the production processes."

Source: [TUM](#) (23 April 2021)

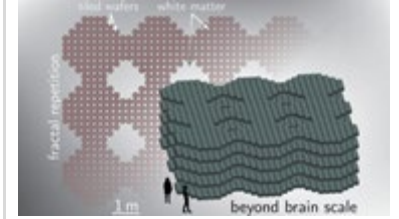
ARCHITECTURE Concrete Wonders: 40 Impressive Details Using the Cement-Based Building Material



"Due to its ability to mold and create different shapes, concrete is one of architecture's most popular materials. While one of its most common uses is as a humble foundation, its plasticity means that it is also used in almost all types of construction, from housing to museums, presenting a variety of details of work that deserves special attention."

Source: [Archdaily](#) (April 2021)

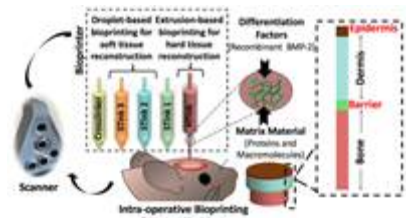
AI Combining Light, Superconductors Could Boost AI Capabilities



"In Applied Physics Letters, by AIP Publishing, researchers at the National Institute of Standards and Technology propose an approach to large-scale artificial intelligence that focuses on integrating photonic components with superconducting electronics rather than semiconducting electronics."

Source: [American Institute of Physics](#) (20 April 2021)

BIOPRINTING Skin And Bones Repaired By Bioprinting During Surgery



"Fixing traumatic injuries to the skin and bones of the face and skull is difficult because of the many layers of different types of tissues involved, but now, researchers have repaired such defects in a rat model using bioprinting during surgery, and their work may lead to faster and better methods of healing skin and bones."

Source: [Penn State University](#) (26 April 2021)

COVID-19 What Role Will At-Home COVID-19 Tests Play in an Increasingly Vaccinated World?



"The first at-home test to get emergency-use approval by the U.S. Food and Drug Administration comes from Ellume, a company based in Australia. IEEE Spectrum spoke with Ellume CEO Sean Parsons about how he imagines his company's test being used in the next phase of the pandemic."

Source: [IEEE Spectrum](#) (26 April 2021)

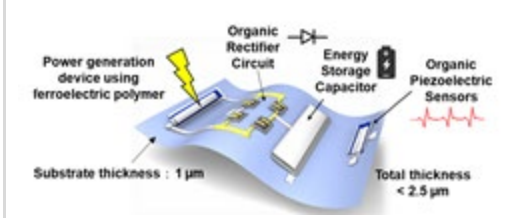
ELECTRONICS Researchers Demonstrate Fully Recyclable Printed Electronics



"Engineers at Duke University have developed the world's first fully recyclable printed electronics. By demonstrating a crucial and relatively complex computer component — the transistor — created with three carbon-based inks, the researchers hope to inspire a new generation of recyclable electronics to help fight the growing global epidemic of electronic waste."

Source: [DUKE University](#) (26 April 2021)

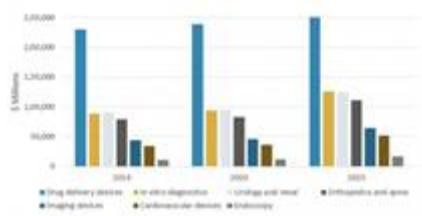
HEALTH TECH Patching Up Your Health



"Researchers at Osaka University and JOANNEUM RESEARCH develop ultrathin self-powered e-health patches that can monitor a user's pulse and blood pressure, which may lead to new flexible motion-based energy harvesting devices."

Source: [Osaka University](#) (23 April 2021)

MEDICAL DEVICES Medical Devices: Technologies and Global Markets



"The report examines recent developments and product portfolios of major players. The patent analysis focuses on technological trends in recent years in regions such as the U.S., Europe and Japan. The report presents a market analysis and estimates the compound annual growth rate (CAGR) for medical device technologies."

Source: [BCC Research](#) (February 2021)

PHYSICS Pulsed Lasers Probe Beyond Titanium Dioxide's Surface



"A collaboration involving experimental and computational chemical physicists has revealed new clues as to how electrons in titanium dioxide interact with light."

Source: [Physics World](#) (26 April 2021)

ROBOTICS Simple Robots, Smart Algorithms



"While most people build increasingly complex and expensive robots to guarantee coordination, we wanted to see what complex tasks could be accomplished with very simple robots"

Source: [TechXplore](#) (24 April 2021)

SPACE NASA's Ingenuity Mars Helicopter Succeeds in Historic First Flight



"NASA's Ingenuity Mars Helicopter became the first aircraft in history to make a powered, controlled flight on another planet."

Source: [NASA](#) (19 April 2021)

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