

Weekly Discovery

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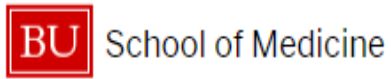
23 - 27 May 2022

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

AI
BU Researchers Develop a Novel AI Algorithm for Digital Pathology Analysis



"...Researchers from Boston University School of Medicine (BUSM) have developed a novel artificial intelligence (AI) algorithm based on a framework called representation learning to classify lung cancer subtype based on lung tissue images from resected tumors."

Source: [Boston University](#) (23 May 2022)

ARCHITECTURE
Haptic And Ramboll Develop Conceptual Timber High-Rise For "Any City In The World"



"As a more standardized international approach to building design emerged, many Indian architects abandoned the vernacular traditions that had been developed over thousands of years to cope with the weather extremes of different regions. The earthen walls and shady verandas of the humid south, and the thick insulating walls and intricate window shades of the hot dry northwest, were swapped for a boxy modern style."

Source: [Dezeen](#) (23 May 2022)

ARTIFICIAL INTELLIGENCE
On The Road To Cleaner, Greener, And Faster Driving



"What if motorists could time their trips so they arrive at the intersection when the light is green? While that might be just a lucky break for a human driver, it could be achieved more consistently by an autonomous vehicle that uses artificial intelligence to control its speed."

Source: [MIT NEWS](#) (17 May 2022)

ARCHITECTURE
Western Architecture is Making India's Heatwaves Worse



"As a more standardized international approach to building design emerged, many Indian architects abandoned the vernacular traditions that had been developed over thousands of years to cope with the weather extremes of different regions. The earthen walls and shady verandas of the humid south, and the thick insulating walls and intricate window shades of the hot dry northwest, were swapped for a boxy modern style."

Source: [TIME](#) (16 May 2022)

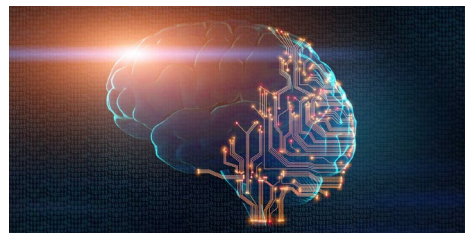
CARBON
Low-Cost Battery-Like Device Absorbs CO2 Emissions While It Charges



"Researchers have developed a low-cost device that can selectively capture carbon dioxide gas while it charges. Then, when it discharges, the CO2 can be released in a controlled way and collected to be reused or disposed of responsibly."

Source: [EurekaAlert!](#) (19 May 2022)

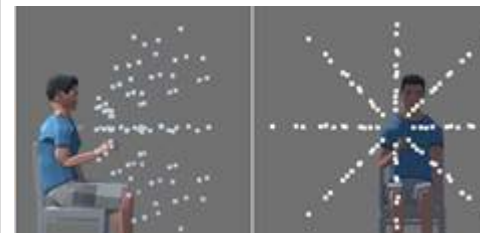
COMPUTING
Component For Brain-Inspired Computing



"Researchers from ETH Zurich, the University of Zurich and Empa have developed a new material for an electronic component that can be used in a wider range of applications than its predecessors."

Source: [ETH Zurich](#) (18 May 2022)

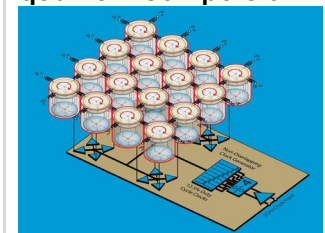
DESIGN
Designers Find Better Solutions With Computer Assistance, But Sacrifice Creative Touch



"Designers often rely on a mix of intuition, experience and trial and error to guide them. Besides being inefficient, this process can lead to 'design fixation', homing in on familiar solutions while new avenues go unexplored. A 'manual' approach also won't scale to larger design problems and relies a lot on individual skill"

Source: [Aalto University](#) (19 May 2022)

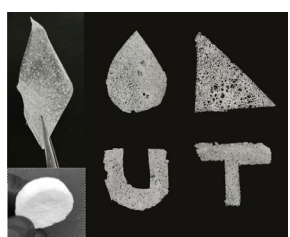
ICT
Researchers Develop Smaller Photonic Topological Insulator A novel device covers a wider range of frequencies and could boost 5G, radar, and quantum computers



"The main benefit of this new photonic topological electromagnetic circuit is how its units are each far smaller than the wavelengths they target, making it 100 to 1,000 times more compact than earlier photonic topological insulators. In addition, it can manipulate a much broader range of wavelengths than previous devices, spanning up to gigahertz frequencies."

Source: [IEEE Spectrum](#) (16 May 2022)

MATERIALS
Low-Cost Gel Film Can Pluck Drinking Water From Desert Air

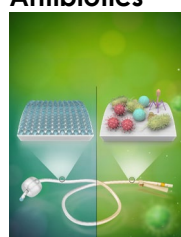


"More than a third of the world's population lives in drylands, areas that experience significant water shortages. Scientists and engineers at The University of Texas at Austin have developed a solution that could help people in these areas access clean drinking water."

The team developed a low-cost gel film made of abundant materials that can pull water from the air in even the driest climates."

Source: [eurekaAlert](#) (23 May 2022)

MATERIAL
Scientists Devise Method To Prevent Deadly Hospital Infections Without Antibiotics



"The new approach, tested in both laboratory and clinical settings, involves depositing a thin layer of what is known as zwitterionic material on the surface of a device and permanently binding that layer to the underlying substrate using ultraviolet light irradiation."

Source: [University of California - Los Angeles](#) (19 May 2022)

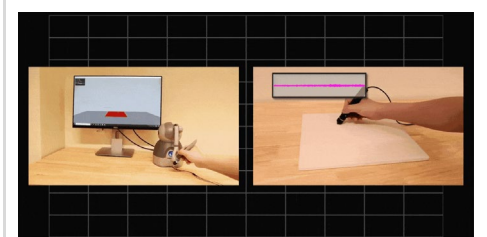
ROBOTS
Using Everyday Wifi To Help Robots See And Navigate Better Indoors



"Engineers ... have developed a low cost, low power technology to help robots accurately map their way indoors, even in poor lighting and without recognizable landmarks or features. The technology uses WiFi signals, instead of light, to help the robot 'see' where it's going."

Source: [UC San Diego](#) (19 May 2022)

HAPTICS
Haptics Device Creates Realistic Virtual Textures



"Now, researchers at the USC Viterbi School of Engineering have developed a new method for computers to achieve that true texture -- with the help of human beings. Called a preference-driven model, the framework uses our ability to distinguish between the details of certain textures..."

Source: [University of Southern California](#) (20 May 2022)

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