SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

Weekly Discovery

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12 - 16 July 2021

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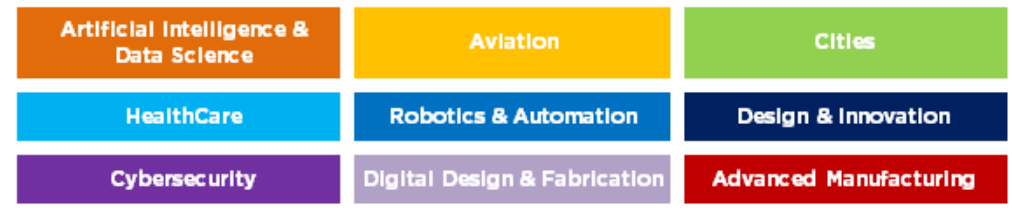


3D PRINTING

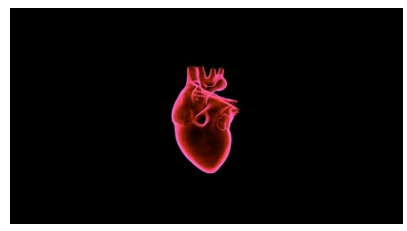
New 3D Printable Phase-Changing Composites Can Regulate Temperatures Inside Buildings

"researchers at Texas A&M University have created novel 3D printable phase-change material (PCM) composites that can regulate ambient temperatures inside buildings using a simpler and cost-effective manufacturing process."

Source: TEXAS A&M UNIVERSITY (9 July 2021)

AI

AI Measures Fat Around The Heart To Predict Diabetes

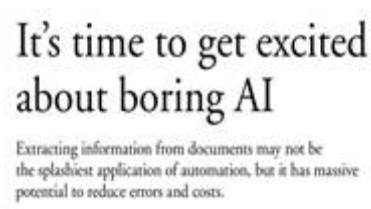


"A new AI tool that automatically measures the amount of fat around the heart from MRI scans could help predict the risk of developing diabetes and other diseases."

Source: The Engineer (9 July 2021)

AI

It's Time To Get Excited About Boring AI



" Extracting information from documents may not be the splashiest application of automation, but it has massive potential to reduce errors and costs."

Source: PWC (24 June 2021)

AI

Training an AI eye on the Moon

"A Moon-scanning method that can automatically classify important lunar features from telescope images could significantly improve the efficiency of selecting sites for exploration."

Source: KAUST (12 July 2021)

ARCHITECTURE

A Year After Its Devastating Explosion, a Bold Plan Emerges for Beirut's Battered Port

"The winning entry is equal parts imagination and innovation: a scheme that envisions the regenerated site as an economically self-sustaining public park and market, open to the city it was once sealed off from. Part exercise in idealism, part civic project, the winners comprise a four-person team from the West Bank city of Ramallah..."

Source: architectural digest (10 July 2021)

IMAGING

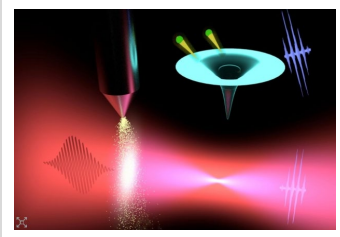
Boosting Digital Images with More True-to-Life Color

"…researchers from China have developed a new approach to digitizing color that could help improve the realism of cameras, displays and LED lighting. Instead of using RGB combinations to form a color space, the new set of algorithms produces colors based on standards set by the International Commission on Illumination (CIE)."

Source: Eurekalert (7 July 2021)

LASER

Table-top Laser Delivers Intense Extreme-Ultraviolet Light

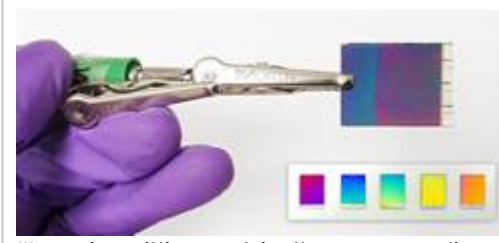


"The new optical technique could make high-intensity XUV pulses far more accessible to labs worldwide, opening up new possibilities for high-speed nanoscale imaging."

Source: Physics World (12 July 2021)

MATERIAL SCIENCE

New Electronic Paper Displays Brilliant Colours



"Imagine sitting out in the sun, reading a digital screen as thin as paper, but seeing the same image quality as if you were indoors. Thanks to research from Chalmers University of Technology, Sweden, it could soon be a reality. A new type of reflective screen - sometimes described as 'electronic paper' - offers optimal colour display, while using ambient light to keep energy consumption to a minimum."

Source: CHALMERS UNIVERSITY OF TECHNOLOGY (12 July 2021)

MATERIALS

Shape-Memory Alloys Might Help Airplanes Land Without A Peep

"Researchers at Texas A&M University have conducted a computational study that validates using a shape-memory alloy to reduce the unpleasant plane noise produced during landing. They noted that these materials could be inserted as passive, seamless fillers within airplane wings that automatically deploy themselves into the perfect position during descent."

Source: TEXAS A&M UNIVERSITY (12 July 2021)

OPTICAL SINGULARITY

Harnessing The Dark Side

"Today, some optical singularities, including optical vortices, are being explored for use in optical communications and particle manipulation but scientists are just beginning to understand the potential of these systems. The question remains — can we harness darkness like we harnessed light to build powerful, new technologies? "

Source: Harvard (12 July 2021)

POLLUTION

Is Global Plastic Pollution Nearing An Irreversible Tipping Point?

" Current rates of plastic emissions globally may trigger effects that we will not be able to reverse, argues a new study by researchers from Sweden, Norway and Germany published on July 2nd in Science. According to the authors, plastic pollution is a global threat, and actions to drastically reduce emissions of plastic to the environment are "the rational policy response"."

Source: Stockholm University (1 July 2021)

SUPERCONDUCTIVITY

A Super New Theory

"A researcher at the University of Tsukuba introduces a new theoretical model of high-temperature superconductivity, in which electrical current can flow with zero resistance, that may lead to extremely efficient energy generation and transmission."

Source: University of Tsukuba (9 July 2021)

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