SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

Weekly Discovery

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31 Aug - 4 Sep 2020

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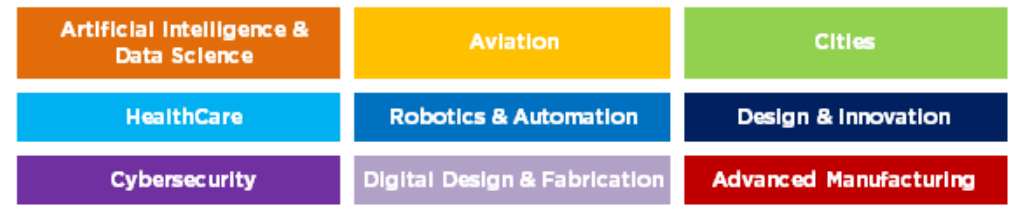


ARCHITECTURE

The Architecture Of Heat: How We Built Before Air-Con

"Air conditioning has fundamentally changed the work of an architect, says Alan Short, professor of architecture at Cambridge university and author of The Recovery of Natural Environments in Architecture. "Architects are no longer thinking about the environments in their buildings — the air-conditioning engineer does that."

Source: Financial Times (28 August 2020)

ARTIFICIAL INTELLIGENCE

Ethics Of AI: Benefits And Risks Of Artificial Intelligence Systems

"Artificial Intelligence (AI) and automation are dramatically changing and influencing our society. Applying principles of AI ethics to the design and implementation of algorithmic or intelligent systems and AI projects in the public sector is paramount. "

Source: Interesting Engineering (27 August 2020)

AUTONOMOUS VEHICLES

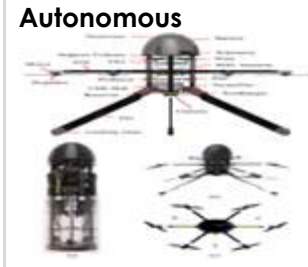
Small Japanese Town To Test First Autonomous Amphibious Bus

"SIT is developing the self-driving technologies for both land and water that are based on the open-source Autoware platform for autonomous cars, and on controllers for modified Joy Cars."

Source: IEEE Spectrum (27 August 2020)

DRONES

Caltech's Cannon-Launched SQUID Drone Doubles in Size, Goes Autonomous

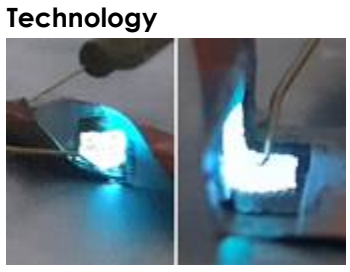


"The point of micro-SQUID was to work out the general aerodynamic and structural principles for a ballistically launched multirotor, rather than to develop something mission capable. Mission capable means, among other …"

Source: IEEE Spectrum (27 August 2020)

ELECTRONICS

Team's Flexible Micro Leds May Reshape Future Of Wearable Technology



"University of Texas at Dallas researchers and their international colleagues have developed a method to create micro LEDs that can be folded, twisted, cut and stuck to different surfaces.."

Source: University of Texas Dallas (28 August 2020)

ENTREPRENEURSHIP

I Cofounded Two Startups With My Best Friend. Here Are 5 Ways We Made It Work

"Starting a business with a friend can be challenging. Your friendship will change, the way you interact will change, and the way you run your business will change."

Source: Fast Company (31 August 2020)

HEALTHCARE

Researchers 3D Print Lifelike Heart Valve Models

Source: US Department of Health & Human Services

"Researchers have developed a groundbreaking process for multi-material 3D printing of lifelike models of the heart's aortic valve and the surrounding structures that mimic the exact look and feel of a real patient."

Source: Science Daily (28 August 2020)

MATERIALS

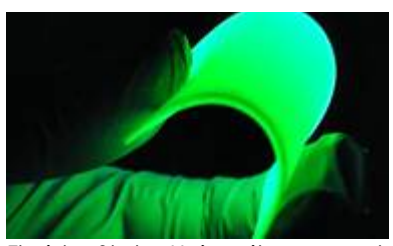
Can Sunlight Convert Emissions Into Useful Materials?

"… they demonstrated that ultraviolet (UV) light could be very effective in exciting an organic molecule, oligophenylene. … the CO_2 reactive and able to be reduced and converted into things like plastics, drugs or even furniture."

Source: EurekAlert! (1 September 2020)

MATERIALS

FSU Researchers Develop New X-Ray Detection Technology

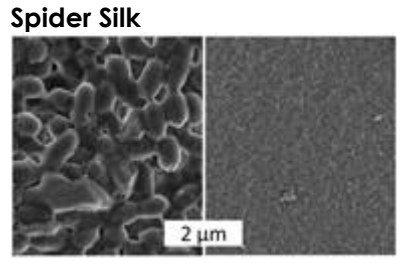


Florida State University researchers have developed a new material that could be used to make flexible X-ray detectors that are less harmful to the environment and cost less than existing technologies. Read more in Nature.

Source: Florida State University (31 August 2020)

MATERIALS

Preventing Infection, Facilitating Healing: Bayreuth Researchers Develop New Biomaterials From Spider Silk



"New biomaterials developed at the University of Bayreuth eliminate risk of infection and facilitate healing processes. These nanostructured materials are based on spider silk proteins. They prevent colonization by bacteria and fungi, but at the same time proactively assist in the regeneration of human tissue. They are therefore ideal for implants, wound dressings, prostheses, contact lenses, and other everyday aids"

Source: University of Bayreuth (28 August 2020)

NANOMATERIALS

Breakthrough In Blue Quantum Dot Technology

"The team's breakthrough has led to quantum dots that produce green light at an external quantum efficiency (EQE) of 22% and blue at 12.3%."

Source: Phys.org (20 August 2020)

POST-COVID BUSINESS

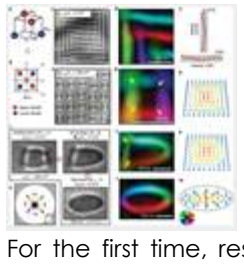
From A Buzz To Biz Lever: How New Technology Is Becoming Central In A Post-Covid World

"Behaviour changes are here to stay, automation will happen across industries — and that's a good thing, say ET Back to Business panellists as they chart how new technology is becoming central in a post-COVID world."

Source: Economic Times (31 August 2020)

PHYSICS

Magnetic Vortices, Bits Of The Future

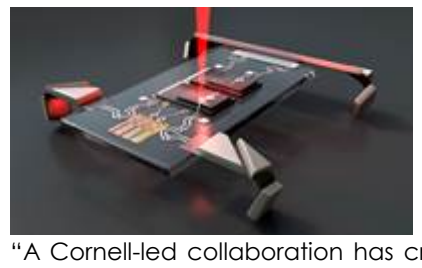


For the first time, researchers successfully manipulated and controlled minute magnetic structures called skyrmions in ways that suggest they could be useful in electronic applications.

Source: University of Tokyo (31 August 2020)

ROBOTICS

Laser Jolts Microscopic Electronic Robots Into Motion

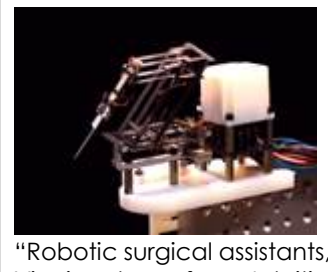


"A Cornell-led collaboration has created the first microscopic robots that incorporate semiconductor components, allowing them to be controlled – and made to walk – with standard electronic signals."

Source: CORNELL (26 August 2020)

ROBOTICS

Origami Surgical Manipulator to Perform Microsurgeries



"Robotic surgical assistants, such as the da Vinci systems from Intuitive Surgical, are now routinely used during laparoscopic procedures to improve operative precision, flexibility, and to manipulate multiple tools at once. "

Source: Medgadget (26 August 2020)

WEARABLE TECH

This Wearable Monitors The Well-Being Of Senior Citizens Who Self-Isolate During The Pandemic

"In their calculations, the researchers used refractive index and emission wavelength values from standard scintillation materials. Then they optimized the thicknesses of the layers such that emission was enhanced in detectable directions and suppressed in undetectable ones."

Source : IEEE Spectrum (28 August 2020)

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