

Weekly Discovery

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30 August – 3 September 2021

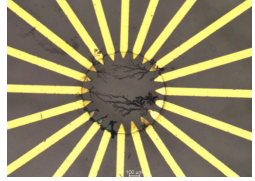
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ARTIFICIAL INTELLIGENCE

Implantable AI System Developed for Early Detection and Treatment of Illnesses



"In this work, the research team led by Prof. Karl Leo, Dr. Hans Kleemann and Matteo Cucchi demonstrates an approach for real-time classification of healthy and diseased bio-signals based on a biocompatible AI chip."

Source: [SciTechDaily](#) (27 August 2021)

CARBON

Good News: The Most Popular Material On Earth Is Great For Storing CO2

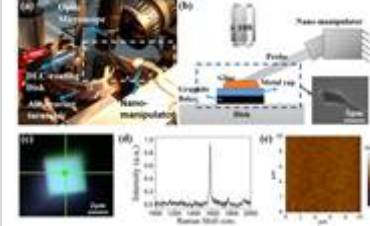


"researchers found that only four technologies had a better than 50% chance of benefiting the environment. And the most promising two were in concrete."

Source: [Fast Company](#) (27 August 2021)

DEVICES

Can Devices That Never Wear Out Come Into Reality?



"The team of Prof. Quanshui Zheng at Tsinghua University, China, used SSL systems composed of graphite and diamond-like carbon (DLC) films and achieved wear-free sliding for a distance of up to 100 km with a sliding speed of 2.5 m/s in ambient environment."

Source: [EurekaAlert!](#) (30 August 2021)

ELECTRIC BIKE

A DIY E-bike Conversion on the Cheap Electrifying a bike can be electrifyingly easy

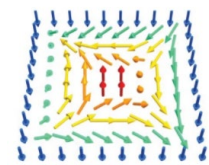


"This simple electric-bike conversion involves just a few basic components: a brushless motor mounted under the chainstays [A]; a lithium-ion battery pack, electronic speed controller, and Arduino, housed in a normal trunk bag [B]; a Drok meter [C], two Hall-effect sensors [D] and a momentary rocker switch [E], all mounted to the handlebars."

Source: [IEEE Spectrum](#) (20 August 2021)

ELECTRONICS

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 2021)

HEALTH TECH

'Smart' Shirt Keeps Tabs On The Heart



"The Brown School of Engineering lab of chemical and biomolecular engineer Matteo Pasquali reported in the American Chemical Society journal Nano Letters that it sewed nanotube fibers into athletic wear to monitor the heart rate and take a continual electrocardiogram (EKG) of the wearer."

Source: [RICE University](#) (30 August 2021)

LED

Bright Idea: New Leds Can Detect Off Food And Lethal Gases



"Your smart device could soon be even smarter with a new infrared light emitting diode (LED) that is 'tuneable' to different wavelengths of light – it could enable your fridge to tell you when your food is going off and your phone to tell you if that Gucci purse is real."

Source: [Science Daily](#) (30 August 2021)

MATERIALS

Improving Strength, Stretchiness And Adhesion In Hydrogels For Wound Healing



"A collaborative team from the Terasaki Institute for Biomedical Innovation (TIBI) has developed methods for improving all three of these properties in GelMA hydrogels in a simple procedure with tunable fabrication parameters."

Source: [Terasaki](#) (30 August 2021)

ROBOTS

We're Getting Closer to Flying Humanoid Robots



"a novel humanoid robot that can fly using a ducted fan propulsion system was developed to explore its potential value for search and rescue in complex environments."

Source: [IEEE](#) (31 August 2021)

TECHNOLOGY

'Charging Room' System Powers Lights, Phones, Laptops Without Wires



"...researchers at the University of Michigan and University of Tokyo have developed a system to safely deliver electricity over the air, potentially turning entire buildings into wireless charging zones."

Source: [University of Michigan](#) (30 August 2021)

TRUST CHAINS

Digital Currency and Trade Systems Are Tearing up the Rules We need a "digital Bretton Woods" to set standards

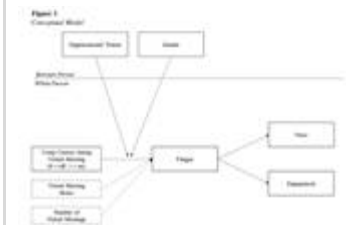


"The next big thing in global commerce is "trust chain" digital platforms. Nations are now creating such platforms to allow businesses to execute transactions from anywhere on the planet securely and irrefutably. These platforms—which combine open alliance legal agreements, distributed ledger technology, and end-to-end encryption—can handle not only payments but also finance, trade, tax, and audits in a uniform manner."

Source: [IEEE Spectrum](#) (30 August 2021)

VIRTUAL MEETINGS

Turning Cameras Off During Virtual Meetings Can Reduce Fatigue, Uarizona Research Finds



"There's always this assumption that if you have your camera on during meetings, you are going to be more engaged," Gabriel said. "But there's also a lot of self-presentation pressure associated with being on camera. Having a professional background and looking ready, or keeping children out of the room are among some of the pressures."

Source: [EurekaAlert!](#) (30 August 2021)

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