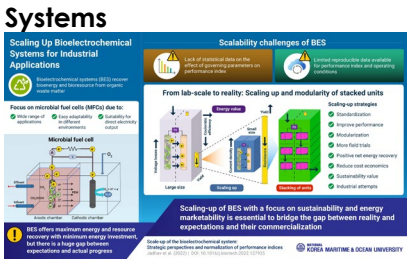
Weekly Discovery

We SHARE to inspire and ignite ideas!

23 - 27 January 2023

BIOELECTROCHEMICAL SYSTEMS

Korea Maritime And Ocean University Researchers Lay Out Strategies For Up-Scaling Of Bioelectrochemical Systems



"With rising concerns about energy and water management, microbial electrochemical technologies (METs), such as microbial fuel cells, have emerged as promising solutions. However, actual progress in these technologies have not lived up to the expectations so far. Now, in a new study, researchers from Korea, India, UAE, and Turkey have highlighted strategies that can help with the up-scaling of METs, eventually leading to their commercialization and widespread use. "

Source: KMOU (16 January 2023)

CONSTRUCTION

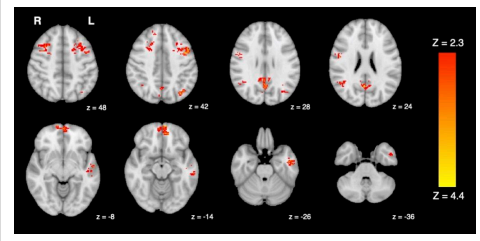
Could This Inflatable Factory Reinvent Construction?

"The inside of the pilot factory of construction startup Cuby is like the inside of a lot of factories doing the prefabrication of buildings: There are rows of machines and workstations and small teams of people efficiently building chunks of what will eventually be combined into a building. Such factory-based construction takes what would conventionally be built on a construction site and builds it inside a factory, making the bulk of construction more streamlined and weather-agnostic, and the onsite work more akin to assembly. Cuby is one of many companies trying to make factory-based construction a mainstream part of the way buildings get built."

Source: FAST COMPANY (23 January 2022)

HEALTH

Traffic Pollution Impairs Brain Function

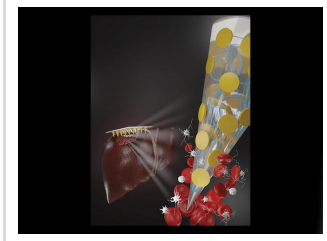


"A new study by researchers at the University of British Columbia and the University of Victoria has shown that common levels of traffic pollution can impair human brain function in only a matter of hours.."

Source: UBC (24 January 2023)

MEDTECH

Novel Microneedle Bandage Could Save Lives By Stopping Blood Loss From Wounds

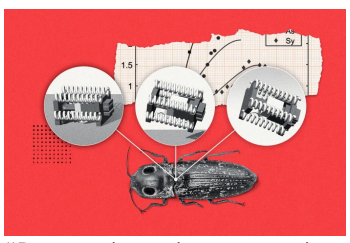


"The hemostatic microneedle technology developed by Sheikhi can be applied like a typical adhesive bandage to quickly stop bleeding. The biocompatible and biodegradable microneedle arrays (MNAs) on the patch increase its surface contact with blood and accelerate the clotting process. The needles also increase the adhesive properties of the patch via mechanical interlocking to promote wound closure. "

Source: PENN STATE (23 January 2023)

ROBOTICS

Click Beetle-Inspired Robots Jump Using Elastic Energy

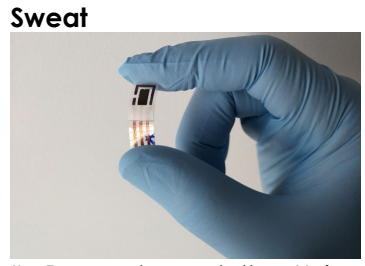


"Researchers have made a significant leap forward in developing insect-sized jumping robots capable of performing tasks in the small spaces often found in mechanical, agricultural and search-and-rescue settings. "

Source: UNIVERSITY OF ILLINOIS (23 January 2023)

SENSOR

Researchers Create A Low-Cost Sensor That Detects Heavy Metals In Sweat

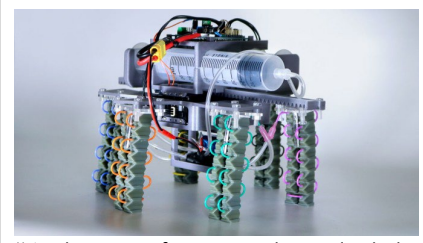


". Researchers at the University of São Paulo (USP) in Brazil have now developed a portable sensor made of simple materials to detect heavy metals in sweat, which is easily sampled. The flexible copper sensor is made from ordinary materials: conductive copper adhesive tape, sheet of transparency film, paper label, nail varnish, circuit fabrication solution, and acetone."

Source: FAPESP (25 January 2022)

SOFT ROBOTICS

Soft Robots Harness Viscous Fluids For Complex Motions

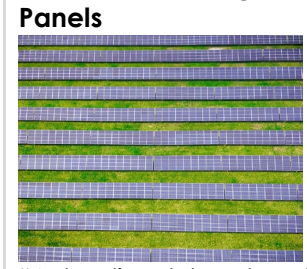


"A team of researchers led by Kirstin Petersen, assistant professor of electrical and computer engineering at Cornell University, designed a new – and surprisingly simple – system of fluid-driven actuators that enable soft robots to achieve more complex motions. The researchers accomplished this by taking advantage of the very thing – viscosity – that had previously stymied the movement of fluid-driven soft robots."

Source: Cornell (23 January 2023)

SOLAR

Harnessing Solar Energy: New Method Improves Readings Of Double-Sided Panels



"A leading laboratory in photonics and renewable energy at the University of Ottawa has developed a new method for measuring the solar energy produced by bifacial solar panels, the double-sided solar technology which is expected to meet increased global energy demands moving forward."

Source: UOTTAWA (17 January 2023)

SUSTAINABILITY

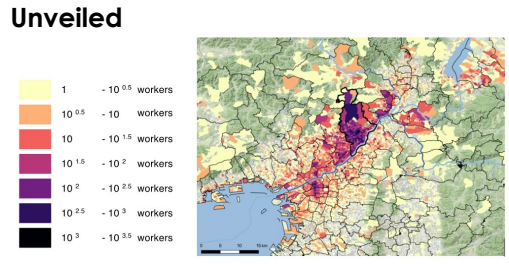
A New Approach To Sharing The Burden Of Carbon Dioxide Removal

"The hemostatic microneedle technology developed by Sheikhi can be applied like a typical adhesive bandage to quickly stop bleeding. The biocompatible and biodegradable microneedle arrays (MNAs) on the patch increase its surface contact with blood and accelerate the clotting process. The needles also increase the adhesive properties of the patch via mechanical interlocking to promote wound closure. "

Source: IIASA (18 January 2023)

SYNTHETIC POPULATIONS

Novel Method For Assigning Workplaces In Synthetic Populations Unveiled

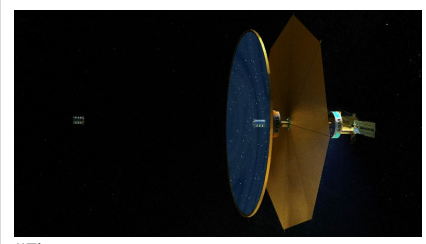


"Synthetic populations are computer-generated models that mimic real-world populations in terms of characteristics such as age, gender, and occupation; they are useful when conducting social simulations. In a recent study, researchers developed a new approach to assign workplaces to individuals in a synthetic Japanese population with household information, based on ODI (Origin-Destination-Industry) data. Their efforts will enable more accurate, realistic simulations of the day-time distribution of workers in Japan, helping to improve decision-making and planning."

Source: SHIBAURA (19 January 2022)

TECHNOLOGY

It's Not Sci-Fi—NASA Is Funding These Mind-Blowing Projects



"The space agency gave money to researchers working on liquid telescope mirrors, a lunar oxygen pipeline, and Martian building blocks made of fungi."

Source: WIRED (20 January 2023)

WASTE MANAGEMENT

Satellite Monitoring Of Terrestrial Plastic Waste

"Plastic waste is a significant environmental pollutant that is difficult to monitor. We created a system of neural networks to analyze spectral, spatial, and temporal components of Sentinel-2 satellite data to identify terrestrial aggregations of waste. The system works at wide geographic scale, finding waste sites in twelve countries across Southeast Asia.."

Source: PLOS (18 January 2022)

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