Best of Last Week—Entangled beams of light, AI gadgets at CES 2023, good hydration linked to healthy aging

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It was a good week for science research as a team at the University of São Paulo's Physics Institute's Laboratory for Coherent Manipulation of Atoms and Light developed <u>a light source</u> that produced two entangled beams of light—the optical-parametric-oscillator-based device was quantum-correlated. Also, a team at the U.S. Department of Energy's Lawrence Berkeley National Laboratory developed <u>a new method of</u> <u>refrigeration</u>—called "ionocaloric cooling," it is based on phase changes in a material that results in cooling. And in a bit of bad news, a trio of researchers, Michael Park, Erin Leahey and Russell Funk, analyzed millions of research papers and found that <u>the rate of scientific</u> <u>breakthroughs</u> is slowing over time.

In technology news, a team at the University of Michigan announced <u>a</u> <u>new catalyst</u> that is 10 times more efficient than previous sun-powered, water-splitting devices—possibly paving the way to cheap, sustainable hydrogen. And all indications suggest that <u>AI-infused gadgets</u> will be a major draw at this year's CES extravaganza in Las Vegas. After disrupted shows the past two years, CES 2023 is expected to be a massive event this time around. A team with members from MIT, Harvard University, DMAT srl, Udine, and Istituto Meccanica dei Materiali SA, determined how the ancient Romans made <u>concrete that</u> <u>was so durable</u>—they added millimeter-scale bright white mineral particles that gave the concrete self-healing capabilities. And BMW unveiled a prototype car called i Vision Dee at CES 2023, which, among other features such as projecting augmented reality images on the windshield, was able to <u>change the color of its exterior on demand</u>.

In other news, a team at Baylor College of Medicine found evidence showing that <u>dawn-to-dusk dry fasting</u> can lead to health benefits. In their study of immune cells, they found that fasting during daylight hours for weeks at a time could have anti-atherosclerotic, anti-inflammatory and anti-tumorigenic effects on the proteins in peripheral blood mononuclear cell immune cells. A team at the University of Oxford's School of Geography found that <u>compound extreme heat and drought</u> will hit approximately 90% of the world's population at some point in the future. And finally, a team at the U.S. National Institutes of Health found evidence that <u>good hydration</u> can be linked to healthy aging.

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