

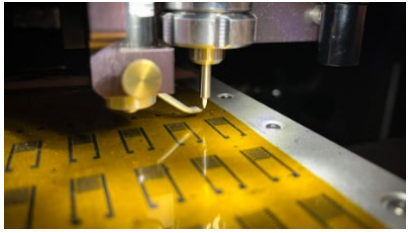
Weekly Discovery

We SHARE to inspire and ignite ideas!

20 Apr – 24 Apr 2026

AI

Artificial neurons successfully communicate with living brain cells



"Engineers at Northwestern University have taken a striking leap toward merging machines with the human brain by printing artificial neurons that can actually communicate with real ones. These flexible, low-cost devices generate lifelike electrical signals capable of activating living brain cells, a breakthrough demonstrated in mouse brain tissue.

This advance moves researchers closer to electronics that can directly interface with the nervous system. Potential uses include brain-machine interfaces and neuroprosthetics, such as implants that could help restore hearing, vision, or movement.

The technology also points toward a new generation of computing systems inspired by the brain. By replicating how neurons communicate, future hardware could perform complex tasks using far less energy. The brain remains the most energy-efficient computing system known, and scientists hope to apply its principles to modern technology."

Source: [Northwestern University](#) (18 Apr 2026)

AI

Suicide prevention measures can help AI better protect young users



"With most teens reporting use of artificial intelligence (AI) 'companions,' conversational AI is rapidly becoming a first point of contact for distress and suicidality — often before clinicians or families are aware," writes Dr. Allison Crawford, psychiatrist and associate scientist, and chief medical officer for 9-8-8 Suicide Crisis Helpline at the Centre for Addiction and Mental Health (CAMH) with Dr. Tristan Glatard, scientific director of the Krembil Centre for Neuroinformatics, CAMH, Toronto, Ontario.

A recent survey of 1060 youth aged 13 to 17 years in the US found that 72% reported using an AI companion and 52% reported regular use. According to recent data from OpenAI, more than 1.2 million ChatGPT users of all ages express suicidal ideation in their interactions each week.

The authors note the dichotomy in AI, a tool that can offer a sympathetic ear and potential support for someone in distress, but may, on the other hand, cause additional harm to people who are already in a vulnerable situation.

"A well-designed chatbot can normalize help-seeking, reduce isolation, and offer coping strategies at moments of distress; it could even support treating clinicians by helping to identify symptom patterns, early warning signs, and opportunities for outreach. However, in cases where poorly designed AI fails to recognize suicidality, mishandles disclosures, or provides unsafe or misleading responses, real harms can arise..."

Source: [Canadian Medical Association Journal](#) (20 Apr 2026)

ARCHITECTURE

Coachella 2026 Immersive Installations Explore Monumentality and Light Transparency in the California Desert



"The 25th edition of the Coachella Valley Music and Arts Festival returns to the Empire Polo Club in Indio, California, from April 10 to 12 and April 17 to 19, 2026, bringing together more than 130 acts alongside an ambitious program of large-scale art installations. Presented by Public Art Company (PAC) and curated by founder Raffi Lehrer in collaboration with Goldenvoice Art Director Paul Clemente, this year's selection explores monumentality through luminance, transparency, and lightness of form. Set within Coachella's desert oasis, the installations invite visitors to engage physically and sensorially, responding to shifting daylight and the evolving atmosphere from sunrise to nightfall."

Source: [Archdaily](#) (14 Apr 2026)

ARCHITECTURE

Five Texas cities "catalyzing" urban development with convention centres



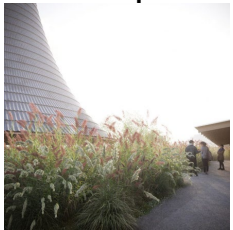
"The well-known phrase "man is what he eats" (Der Mensch ist, was er isst), by Ludwig Feuerbach, asserts that the physical, mental, and even moral constitution of human beings is directly linked to what they consume. Today, this idea is widely internalized, with growing awareness around food, nutrition, and the impact of what we ingest on our bodies. Yet, this same level of awareness doesn't extend to the environments we inhabit, where materials continue to be treated as technical decisions rather than active agents in the relationship between body and space. Considering that a large portion of the global population spends around 90% of their time indoors, it is rarely discussed what actually composes these spaces at their most fundamental level: materials. Walls, floors, and finishes are often approached as technical or aesthetic choices, when in reality they can function as continuous sources of exposure to potentially harmful substances..

It is within this context that the Healthy Materials Lab (HML), founded in 2015 at Parsons School of Design, proposes a shift in perspective. Based on the recognition that the design and construction industry, especially within the affordable housing sector, plays a critical role in the declining health of both people and ecosystems, the lab argues that material specification should be understood as a central public health concern. We spoke with Jonsara Ruth and Alison Mears, architects and founders of the lab, who shared how this initiative has been developed over the past decade and why material selection may be one of the most critical decisions in contemporary architectural practice. The lab emerged supported by a three-year grant from the JPB Foundation, enabling the development of research on material impacts and the formulation of strategies aimed at architectural practice.."

Source: [Dezeen](#) (16 Apr 2026)

ARCHITECTURE

Christ & Gantenbein designs Seoul arts centre to have "direct relationship with the elements"



"Sun, wind and rain will be encouraged to enter the towering timber pavilion that defines Dongjak Art Space, which architecture studio Christ & Gantenbein is designing in Seoul, South Korea.

Set to open in 2028, the 30-metre-high structure will sit alongside a subterranean gallery and offer an adaptable exhibition and events space for a residential neighbourhood in the Dongjak District.

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Source: [DEZEEN](#) (15 Apr 2026)

ENERGY

Scientists develop dirt-powered fuel cell that could replace batteries

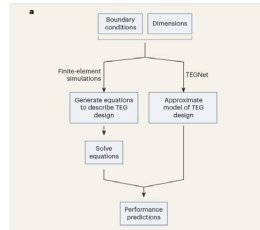


"Scientists have developed a fuel cell that uses microbes in soil to produce electricity. The device can power underground sensors for tasks like monitoring moisture or detecting touch, without needing batteries or solar panels. It works in both dry and wet conditions and even lasts longer than similar technologies. This could pave the way for sustainable, low-maintenance sensors in farming and environmental monitoring..."

Source: [Northwestern University](#) (19 Apr 2026)

ENERGY

AI speeds up design of devices that turn waste heat into electricity

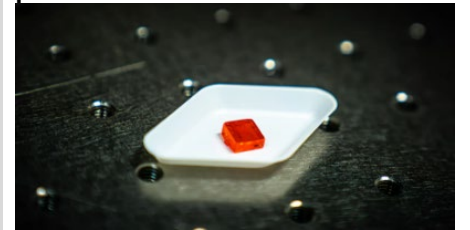


"Devices known as thermoelectric generators (TEGs) can convert waste heat directly into electricity without using moving parts or producing carbon dioxide emissions. From powering wearable devices to recovering heat produced by industrial processes, TEGs could have a pivotal role in addressing global energy challenges. However, optimizing TEG designs is a highly intricate task that has prevented these devices from reaching their full potential. Writing in Nature, Li et al.1 introduce TEGNet, a neural-network-based system that models TEG performance with greater than 99% accuracy while slashing computational time by around 10,000-fold compared with using conventional predictive systems. Not only does TEGNet accelerate TEG design, but it also produces material-specific models of TEG components that can be assembled virtually in a modular way. This enables rapid exploration of diverse device architectures.."

Source: [Nature](#) (15 Apr 2026)

QUANTUM

"Giant superatoms" could finally solve quantum computing's biggest problem



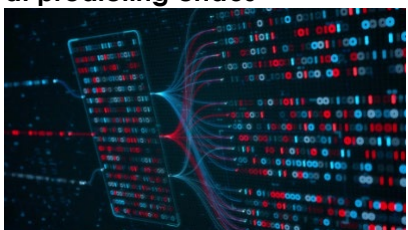
"Researchers at Chalmers University of Technology in Sweden have introduced a new theoretical design for quantum systems based on what they call "giant superatoms." This concept offers a fresh way to protect, control, and share quantum information, potentially bringing scientists closer to building large-scale quantum computers.

Quantum computers are expected to transform fields like drug discovery and encryption by solving problems that are far beyond the reach of conventional machines. However, progress has been limited by a major challenge known as decoherence. This occurs when quantum bits, or qubits, lose their information due to interactions with their surroundings. Even small amounts of electromagnetic noise can disrupt the fragile quantum states needed for computation.."

Source: [Chalmers University of Technology](#) (13 Apr 2026)

QUANTUM

Quantum AI just got shockingly good at predicting chaos



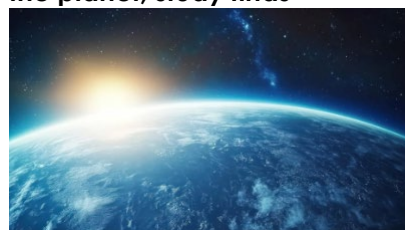
ROBOTS

This simple change stops robot swarms from getting stuck



SUSTAINABILITY

A new force of nature is reshaping the planet, study finds



SUSTAINABILITY

Common cleaning sponge found to release trillions of microplastic fibers



"A new study led by researchers at UCL (University College London) shows that combining quantum computing with artificial intelligence can significantly improve predictions of complex physical systems over long periods. The hybrid approach outperforms leading models that rely only on conventional computers.

The results, published in Science Advances, could enhance simulations of how liquids and gases behave, known as fluid dynamics. These types of models are essential in fields such as climate science, transportation, medicine, and energy production. "

Source: [University College London](#) (17 Apr 2026)

"In crowded environments, more robots don't always mean faster results—in fact, too many can bring everything to a standstill. Harvard researchers discovered a surprising fix: adding a bit of randomness to how robots move can actually prevent gridlock and boost efficiency. By allowing robots to "wiggle" slightly instead of marching in straight lines, they can slip past each other and keep tasks flowing smoothly..

Source: [HARVARD](#) (15 Apr 2026)

"Human societies didn't just adapt to the planet—they learned to reshape it. From early fire use to today's global supply chains, our cultural and social innovations have unlocked extraordinary power to transform Earth and improve human life. But that progress has come with serious costs, including climate change, pollution, and mass extinction. Instead of framing this era—the Anthropocene—as pure crisis, Eriq Ellis argues it's also proof of something hopeful: when people work together, they can drive massive positive change.."

Source: [University of Maryland Baltimore County](#) (19 Apr 2026)

"That "magic" sponge under your sink may be hiding an environmental downside. While melamine sponges are famous for effortlessly scrubbing away stubborn stains, they slowly break down as you use them—shedding tiny plastic fibers that wash into water systems. Researchers estimate that globally, these sponges could release over a trillion microplastic fibers every month, potentially entering the food chain and affecting wildlife.."

Source: [ACS](#) (18 Apr 2026)

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