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AGING

The Cerebral Cortex Ages Less Than Thought



"The human brain ages less than thought and in layers – at least in the area of the cerebral cortex responsible for the sense of touch. Researchers at DZNE, the University of Magdeburg, and the Hertie Institute for Clinical Brain Research at the University of Tübingen come to this conclusion based on brain scans of young and older adults in addition to studies in mice. Their findings, published in the journal Nature Neuroscience, also provide new insights into how the ability to process sensory information changes with age."

Source: [DZNE](#) (11 Aug 2025)

AI

Why AI Emails Can Quietly Destroy Trust at Work



"AI is now a routine part of workplace communication, with most professionals using tools like ChatGPT and Gemini. A study of over 1,000 professionals shows that while AI makes managers' messages more polished, heavy reliance can damage trust. Employees tend to accept low-level AI help, such as grammar fixes, but become skeptical when supervisors use AI extensively, especially for personal or motivational messages. This "perception gap" can lead employees to question a manager's sincerity, integrity, and leadership ability."

Source: [University of Florida](#) (12 Aug 2025)



Featured Course

One-Minute Habits for Better Memory

52m

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ARCHITECTURE

Inclusive Playgrounds: Every Body Can Play Through Architecture



"Play extends beyond its recreational dimension, unfolding as a social [act that encourages children to learn](#), interact, be creative, and engage with their spatial context. As Johan Huizinga notes in *Homo Ludens*, it is a fundamental element of culture, where kids form bonds and explore ways of coexisting. When the [architecture](#) of [play](#) spaces excludes certain bodies or modes of participation, the collective experience becomes fragmented and loses part of its meaning. [Designing with inclusion in mind](#), therefore, means recognizing that the actual value of play lies in its potential to be shared by everyone.

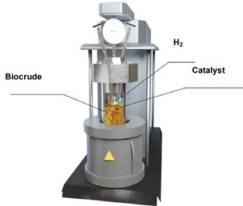
In this relationship, playfulness introduces dynamics and fictions that invite us to explore alternative ways of inhabiting the world. At the same time, architecture provides the physical and sensory framework that enables these possibilities to unfold, with [play structures serving as the link between the two](#). Although play has existed since the origins of human society, it was in the mid-19th century that Friedrich Fröbel's pedagogical approaches, centered on [the concept of kindergarten](#), laid the groundwork for understanding play as a formative, educational activity.

Later, in the 20th century, [Isamu Noguchi](#) and [Aldo van Eyck designed playgrounds that fostered social interaction](#) and creativity, shaping environments with structures that encouraged free exploration, movement, and physical engagement. These open settings allowed [children to conquer public spaces](#), move freely, experiment, and take ownership of the environment, creating atmospheres that support diverse play styles and modes of participation."

Source: [Archdaily](#) (19 Aug 2025)

AVIATION

Illinois Researchers Pair Nanocatalysts, Food Waste to Reduce Carbon Emissions in Aviation



"In 2020, the United States federal government committed to achieving net-zero carbon emissions by 2050. An important step towards carbon neutrality is embracing sustainable aviation fuel (SAF), an alternative to conventional jet fuel that is made from renewable feedstocks. As part of this initiative, Grainger engineers have been hard at work creating the critical nanocatalysts for converting biocrude oil from food waste such as salad dressing into sustainable aviation fuel.

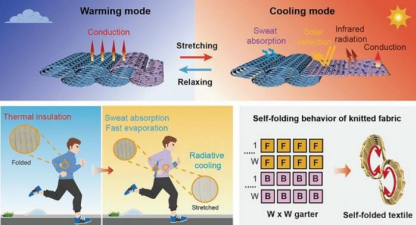
[Hong Yang](#), a professor of chemical & biomolecular engineering, and [Yuanhui Zhang](#), a professor of agricultural & biological engineering, joined forces to tackle this problem.

Their findings, published in *Science Advances*, present a low-cost, scalable and reusable catalyst to produce an alternative to traditional jet fuel, demonstrating the first production of SAF from food waste-derived biocrude using non-noble metal carbide catalysts."

Source: [Furekalert!](#) (19 Aug 2025)

CLIMATE CHANGE

All-Weather 3D Self-Folding Fabric for Adaptive Personal Thermoregulation



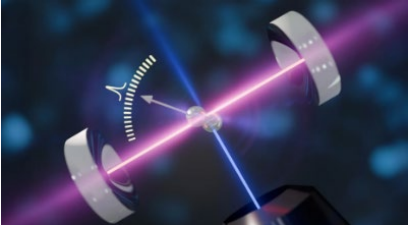
"A sudden snow squall at noon, a scorching asphalt marathon, or an air-conditioned office that never quite gets the temperature right—these are the daily extremes our clothes were never built to handle. In a sweeping review published in *Nano-Micro Letters*, researchers from The Hong Kong Polytechnic University, led by Professor Dahua Shou, introduce a **3D self-folding knitted fabric** that thinks like a thermostat. It toggles between **radiative cooling** and **passive warming** simply by stretching or relaxing, delivering year-round comfort without extra layers, without batteries, and without compromise.

Why Shape-Shifting Matters

Traditional "dual-mode" textiles either flip two layers like a reversible jacket or rely on bulky phase-change capsules. They add weight, trap sweat, and often fail halfway through a trap day. The new fabric sidesteps every limitation by **leveraging geometry itself**. A single sheet of yarn is programmed—stitch by stitch—to curl into a 3-D accordian when relaxed, then flatten into a 2-D sheet when tugged. No hinges, no electronics, no extra seams."

CREATIVITY

Scientists Freeze Quantum Motion Without Cooling



"ETH Zurich researchers levitated a nano glass sphere cluster with record-setting quantum purity at room temperature, avoiding costly cooling. Using optical tweezers, they isolated quantum zero-point motion, paving the way for future quantum sensors in navigation, medicine, and fundamental physics."

DESIGN

Vilo Is a Handheld Device Designed to Provide Comfort After Pregnancy Loss



"University of Leeds student Lucia Guest has developed a [therapeutic device](#) to emotionally support people who have experienced miscarriage and stillbirths.

Vilo uses various sensory stimuli to help alleviate feelings of distress, isolation and being overwhelmed that can arise after pregnancy loss.

Designed to sit comfortably in the palm of the hand, the device offers a tactile alternative to psychological therapies that require people to talk about their emotions.

"There are times when it's difficult to find the words," Guest told Dezeen. "By providing something to hold onto, physical tools can help people feel grounded, supported or connected – without the need to explain how they're feeling. They offer a quiet, private form of support to turn to whenever it's needed."

Guest wanted the device to have an understated appearance so that it could be used in public and private environments. As a result, it has a smooth, pebble-like form, interrupted only by slender light shafts.

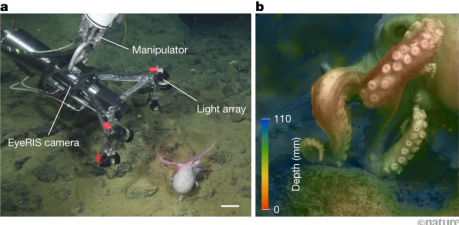
Vilo has four modes: one that emanates warmth and gentle vibrations to regulate the senses, and another that gives off a steadily pulsing light sequence to encourage slow, mindful breathing.

There's also a mode that emits shifting rays of light, providing users with a grounding visual focus if they're unexpectedly overcome with negative emotion.

Finally, there's a mode where users can respond to different lights and vibrations with their partner, fostering contact and

IMAGING

Octopus Motion in the Ocean Tracked by A Deep-Sea 3D Camera



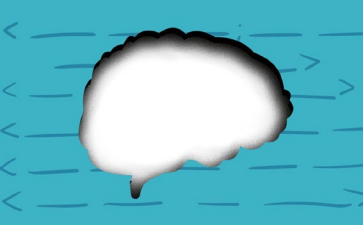
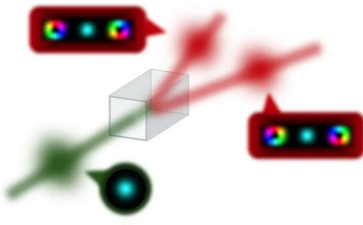
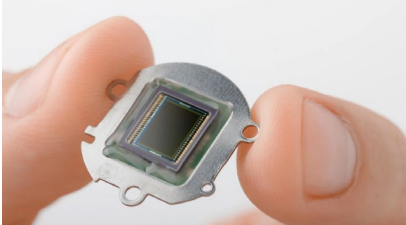

The problem

In the field of biologically inspired design, a mechanistic understanding of biological systems is applied to technologies to address various societal needs. Advances in observational technologies are required to gain an understanding of such systems — especially for animals that live in remote locations, including the deep sea, and that are difficult to observe, such as octopuses. Octopuses have garnered considerable attention from roboticists, but biomechanical studies of whole individuals are exceedingly rare and are typically limited to constrained laboratory settings.

Here we describe the deployment of a remotely operated vehicle, equipped with an innovative light-field imaging system called EyeRIS, to study the locomotion of free-living octopuses (*Muusoctopus robustus*) at depths of more than 3,000 metres at Octopus Garden on Davidson Seamount, off the Californian coast.

The solution

The EyeRIS system enables 3D imaging and visualization in a compact payload that can be integrated into deep-diving underwater robotic vehicles (Fig. 1a). Using EyeRIS, we were able to non-invasively measure size features of several octopuses and calculate the 3D trajectories of their arms as the animals crawled over rough terrain. For the first time in laboratory or *in situ* settings, volumetric changes could be detected along the arm length over time, in whole animals actively navigating a complex environment."

<div>Source: Eurekalert! (18 Aug 2025)</div> <div>MACHINE LEARNING Machine Learning Contest Aims to Improve Speech BCIs: Researchers Hope Public Brain Data Will Spur Innovation <p>"For the next five months, machine learning gurus can try to best predict the speech of a brain-computer interface (BCI) user who lost the ability to speak due to a neurodegenerative disease. Competitors will design algorithms that predict words from the patient's brain data. The individual or team whose algorithm makes the fewest errors between predicted sentences and actual attempted sentences will win a US \$5,000 prize.</p><p>The competition, called Brain-to-text '25, is the second-annual public, open-source brain-to-text competition hosted by a research lab part of the BrainGate consortium, which has been pioneering BCI clinical trials since the early 2000s. This year, the competition is being run by the University of California Davis's Neuroprosthetics Lab. (A group from Stanford University hosted the first competition using brain data from a different BCI user.)</p><p>For two years, the UC Davis research team has collected brain data from a 46-year-old man, Casey Harrell, whose speech is unintelligible except to his regular caregivers. Once the speech BCI was trained on Harrell's brain data, it could decode what he was trying to say over 97 percent of the time and could instantly synthesize his own voice, as previously reported by <i>IEEE Spectrum</i>."</p><div>Source: IEEE Spectrum (16 Aug 2025)</div></div>	<div>Source: Vienna University of Technology (11 Aug 2025)</div> <div>QUANTUM Researchers Confirm Fundamental Conservation Laws at the Quantum Level <p>"Researchers at Tampere University and their collaborators from Germany and India have experimentally confirmed that angular momentum is conserved when a single photon is converted into a pair – validating a key principle of physics at the quantum level for the first time. This breakthrough opens new possibilities for creating complex quantum states useful in computing, communication, and sensing."</p><div>Source: TUNI (23 Jun 2025)</div></div>	<div>connection without the need for verbal communication."</div> <div>Source: Dezeen (13 Aug 2025)</div> <div>QUANTUM Tiny Chip Could Unlock Gamma Ray Lasers, Cure Cancer, And Explore the Multiverse <p>"A groundbreaking quantum device small enough to fit in your hand could one day answer one of the biggest questions in science — whether the multiverse is real. This tiny chip can generate extreme electromagnetic fields once only possible in massive, miles-long particle colliders. Beyond probing the fabric of reality, it could lead to powerful gamma ray lasers capable of destroying cancer cells at the atomic level, offering a glimpse into a future where the deepest mysteries of the universe and life-saving medical breakthroughs are unlocked by technology no bigger than your thumb."</p><div>Source: University of Colorado Denver (13 Aug 2025)</div></div>	<div>Source: Nature (13 Aug 2025)</div> <div>ROBOTICS Tiny Ants Crack the Secret to Perfect Teamwork <p>"Weaver ants increase their individual strength as teams grow larger and by cracking the secret to superefficient teamwork, they offer insights that could transform robot design.</p><p>Weaver ants have solved a problem that has plagued human teams for centuries: individuals contribute less to tasks when more people join in. New research just published in <i>Current Biology</i> shows individual weaver ants actually get stronger as their group grows."</p><div>Source: Light house (12 Aug 2025)</div></div>
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