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AI
The Real Story on AI’s Water Use—and How to Tackle It Cutting AI water use means smarter cooling and less thirsty grids



“AI is hot, capturing headlines, investments, and users. It also runs hot, literally: The [data centers](#) operating artificial intelligence (AI) models use large amounts of electricity and generate enormous heat. To keep [servers](#) from overheating, many facilities rely on cooling systems that use water.

AI data centers' water use comes in two forms. Beyond the water that cools the servers, data centers indirectly contribute to water use through the [electricity generation](#) needed to power their operations. That indirect use often makes up [80 percent or more](#) of the overall water use.

Reducing AI's water footprint means tackling two very different issues—what happens inside the data center walls, and what happens beyond them on the [power grid](#).”

Source: [IEEE Spectrum](#) (10 Sep 2025)

ARCHITECTURE
20 Practices Shaping the Future of Architecture: Winners of the ArchDaily 2025 Next Practices Awards



“ArchDaily is proud to reveal the winners of the 5th edition of [Next Practices](#), recognizing 20 groundbreaking architectural practices from around the globe. These firms embody the creativity, innovation, interdisciplinary approach and social responsibility that are shaping the future of architecture and expanding its horizons.

Launched in 2020, ArchDaily's Next Practices Awards spotlight forward-thinking architecture professionals who are expanding architecture's role in addressing today's most urgent issues. The program provides a platform for emerging firms that redefine the boundaries of the discipline.

Over the past four editions, the initiative has recognized architects, designers, artists, planners, scholars, and other visionaries whose work responds to contemporary challenges in the built environment, fostering a global conversation about architecture's role in society.

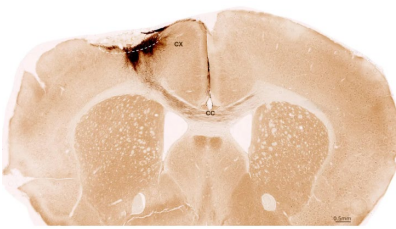
With a strong commitment to geographical diversity, the program has showcased 85 practices from 32 countries, amplifying voices from around the world. Each brings a distinct perspective rooted in local realities while contributing to a shared global discourse. Across the winning practices, recurring values emerge: contextual sensitivity, sustainable material use, co-creation with communities, experimental and interdisciplinary approaches, memory and heritage, social responsibility, and human-scale interventions. Together, these strategies confront pressing global challenges with originality, critical insight, and solution-oriented design.”

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



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CHEMISTRY
Scientists reverse stroke damage with stem cells



“Scientists in Zurich have shown that stem cell transplants can reverse stroke damage by regenerating neurons, restoring motor functions, and even repairing blood vessels. The breakthrough not only healed mice with stroke-related impairments but also suggested that treatments could soon be adapted for humans, marking a hopeful step toward tackling one of the world's most devastating conditions.”

Source: [University of Zurich](#) (16 Sep 2025)

DESIGN
School pupils design modular public seating for King's Cross



“London designers, including [Attua Aparicio](#), [James Shaw](#) and [Studio Furthermore](#), have worked with local teenagers to develop a public [bench](#) for Camden council as part of a project by social enterprise Store that was unveiled at the [London Design Festival](#).

The initiative, titled This Bench Has Legs, saw designers work with north Londond state school students aged 14 to 18 to create a public seating prototype that could be used in the King's Cross area.

Responding to a brief set by developer [Argent](#), which was responsible for the regeneration of the [King's Cross](#) district, [Store](#) set out to create a modular seating system that utilises locally sourced waste materials.

Aparicio, who is involved in running Store's summer schools and after-school clubs, told Dezeen that the design and choice of manufacturing process were based on the objective of creating an affordable, scalable solution.

“Our ambition of having the bench implemented by the council meant that it had to be cost-effective,” she explained. “For that reason, we focused on creating a bench that was industrially producible but also modular and playful.”

Over the course of four separate after-school clubs, students explored modularity with [Livia Lauber](#), glass with [Dawn Bendick](#), plastics with [James Shaw](#) and aluminium with Marina Dragomirova of [Studio Furthermore](#).”

Source: [Dezeen](#) (19 Sep 2025)

HEALTH CARE
A Chinese AI tool can manage chronic disease — could it revolutionize health care?



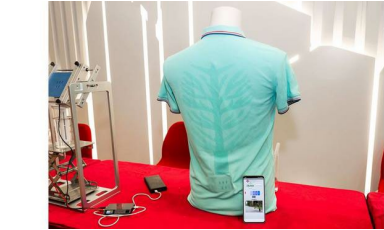
“A Chinese firm has developed a massive artificial intelligence-powered platform to help manage the health of people with [chronic diseases](#).

Details of the large language model (LLM), called XingShi, are sparse, but the company behind it, Fangzhou, says the model integrates speech and image recognition with natural language processing, extensive medical data and reasoning to improve personalized care and boost the productivity of clinicians. The company says that the system has more than 50 million registered users, and more than 200,000 physicians using the platform.

Fangzhou, based in Guangdong, is a pioneer in AI in health care, says Marina Zhang, a science-policy researcher at the University of Technology Sydney in Australia, who focuses on innovation in China.

China, like many nations, has a high prevalence of cardiovascular diseases, cancer, chronic respiratory disorders and diabetes. Estimates suggest that some 180 million older adults in the country live with chronic diseases, and that number is likely to increase as the population ages. There's hope that AI could help to reduce the strain that managing large populations of people with chronic diseases puts on health-care systems.”

HEAT WAVES
PolyU scholars pioneer smart and sustainable personal cooling technologies to address global extreme heat

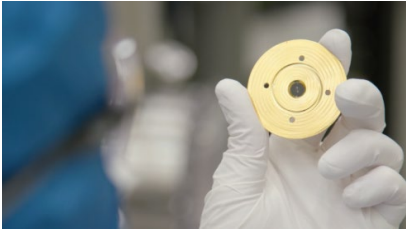


“Smart technologies, especially intelligent wearables and AI, can be key to sustainable personal cooling. Prof. Dahua Shou said, “According to the World Meteorological Organisation, there is an 80% chance that at least one year between 2025 and 2029 will be the hottest on record, making personal cooling increasingly vital for well-being, health and productivity. We have been creating intelligent, superhero-like garments that provide on-demand adaptive cooling and clinician-like health monitoring to help address the challenge of extreme heat.”

By integrating the four cooling mechanisms of radiation, conduction, convection and evaporation, this stand-alone perspective outlines strategies to adaptively regulate body heat and moisture in dynamically changing real-world settings. The paper also presents an AI-driven, closed-loop framework that connects sensing, prediction, and actuation to deliver personalised, energy-efficient cooling, with a scalable and recyclable design that supports public health, workplace safety, and performance.

Sustainable personal cooling is evolving from the use of passive fabrics to the integration of smart systems. Notably, spectrum-selective textiles effectively release mid-infrared body heat while blocking external solar and urban heat gain. Thermal insulation is being engineered with conduction-tunable fillers, while ventilative and evaporative cooling is boosted by moisture-responsive fibres. Lightweight wearables, such as variable emittance devices, and electrocaloric and thermoelectric modules paired with flexible solar and on-body energy storage, enable active and controllable cooling. These

IMAGING
Sandia team creates X-ray images of the future



“When German physicist Wilhelm Röntgen discovered X-rays in the late 1800s while experimenting with cathode ray tubes, it was a breakthrough that transformed science and medicine. So much so that the basic concept remains in use today. But a team of researchers at Sandia National Laboratories believes they've found a better way, harnessing different metals and the colors of light they emit.

“It's called colorized hyperspectral X-ray imaging with multi-metal targets, or CHXI MMT for short,” said project lead Edward Jimenez, an optical engineer. Jimenez has been working with materials scientist Noelle Collins and electronics engineer Courtney Sovinec to create X-rays of the future.

“With this new technology, we are essentially going from the old way, which is black and white, to a whole new colored world where we can better identify materials and defects of interest,” Collins said...”

MATERIALS
Upcycling Proteins Just Got Easier



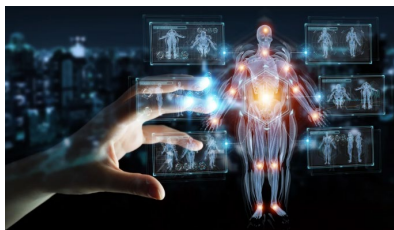
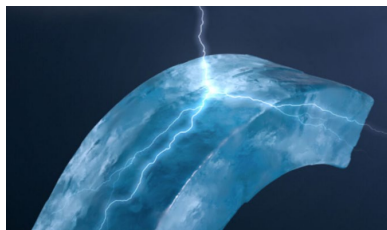
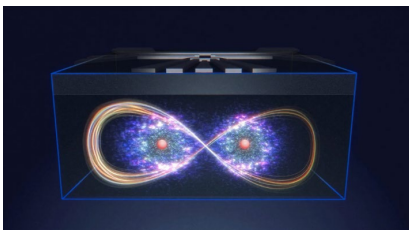
“The textile and meat-processing industries produce billions of tons of waste annually in the form of feathers, wool and hair, all of which are rich in keratin – the strong, fibrous protein found in hair, skin and nails.

Turning all that animal waste into useful products – from wound dressings to eco-friendly textiles to health extracts – would be a boon for the environment and for new, sustainable industries. But upcycling proteins is challenging: Breaking down, or de-naturing, proteins into their component parts typically requires corrosive chemicals in large, polluting facilities, keeping any cost-effective protocol out of reach.

Researchers in the Harvard John A. Paulson School of Engineering and Applied Sciences (SEAS) have uncovered key fundamental chemistry of how proteins like keratin de-nature in the presence of certain salt compounds – an insight that could take protein recycling to the next level.

A team led by Kit Parker, the Tarr Family Professor of Bioengineering and Applied Physics at SEAS, combined experiments and molecular simulations to better illuminate the chemical mechanisms by which salts cause proteins to unfold. They've shown that a solution of concentrated lithium bromide, a salt compound known to break apart keratin, interacts with the protein molecules in a completely unexpected way – not by binding to the proteins directly, as was conventional wisdom, but by changing the structure of the surrounding water molecules to create a setting more favorable for spontaneous protein unfolding.

This insight allowed the researchers to design a gentler, more sustainable keratin extraction

	emerging technologies strategically employ model-selective cooling and incorporate human-centered design for comfort, durability, washability, and low weight, expanding comfort zones and reducing dependence on air conditioning." Source: Nature (19 Sep 2025)		process, separating the protein out of solution easily and without the need for harsh chemicals. The process can also be reversed with the same salt mixture, enabling recovery and reuse of lithium bromide denaturants." Source: Harvard (3 Sep 2025)
OPTICS New crystal camera lets doctors see inside the body like never before  "Scientists have created a perovskite-based gamma-ray detector that surpasses traditional nuclear medicine imaging technology. The device delivers sharper, faster, and safer scans at a fraction of the cost. By combining crystal engineering with pixelated sensor design, it achieves record imaging resolution. Now being commercialized, it promises to expand access to high-quality diagnostics worldwide." Source: Northwestern University (21 Sep 2025)	PHYSICS Scientists find that ice generates electricity when bent  "An international study involving ICN2, at the UAB campus, Xi'an Jiaotong University (Xi'an) and Stony Brook University (New York), has shown for the first time that ordinary ice is a flexoelectric material. In other words, it can generate electricity when subjected to mechanical deformation. This discovery could have significant implications for the development of future technological devices and help to explain natural phenomena such as the formation of lightning in thunderstorms. The study, published in the journal Nature Physics, represents a significant step forward in our understanding of the electromechanical properties of ice. "We discovered that ice generates electric charge in response to mechanical stress at all temperatures. In addition, we identified a thin 'ferroelectric' layer at the surface at temperatures below -113°C (160K). This means that the ice surface can develop a natural electric polarization, which can be reversed when an external electric field is applied—similar to how the poles of a magnet can be flipped. The surface ferroelectricity is a cool discovery in its own right, as it means that ice may have not just one way to generate electricity but two: ferroelectricity at very low temperatures, and flexoelectricity at higher temperatures all the way to 0 °C " explains Dr Xin Wen, a member of the ICN2 Oxide Nanophysics Group and one of the study's lead researchers. This property places ice on a par with electroceramic materials such as titanium dioxide, which are currently used in advanced technologies like sensors and capacitors." Source: UAB (1 Sep 2025)	QUANTUM Scientists just made atoms talk to each other inside silicon chips  "Researchers at UNSW have found a way to make atomic nuclei communicate through electrons, allowing them to achieve entanglement at scales used in today's computer chips. This breakthrough brings scalable, silicon-based quantum computing much closer to reality." Source: UNSW (21 Sep 2025)	WEARABLE TECHNOLOGY Meta launches first AI smart glasses with integrated display  "Technology company Meta has added to its Ray-Ban smart glasses series with the Meta Ray-Ban Display – its first pair to combine AI and augmented reality. Meta's latest glasses feature a heads-up display that overlays information such as messages, captions and video calls over the view from one eye. The glasses ship with a smart wristband that enables voice-free control through subtle hand movements – a unique innovation that the Facebook parent company previewed with a paper in Nature just months ago. Meta CEO Mark Zuckerberg unveiled the glasses in a keynote presentation at the company's Connect conference on Wednesday. In it, he pitched the Meta Ray-Ban Display as a revolutionary device that would free people from the distractions of their smartphones while enhancing their natural capabilities. "Our goal is to build great-looking glasses that deliver personal superintelligence and a feeling of presence using realistic holograms," said Zuckerberg." Source: Dezeen (19 Sep 2025)

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