SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

Weekly Discovery

We SHARE to inspire and ignite ideas!

11 May - 15 May 2026

ANNUAL REVIEWS

Annual Reviews Database offers a comprehensive collection of critical reviews written by leading scientists. The reviews are published in more than 41 focused disciplines which will provide useful and intelligent synthesis of primary research literature in the fields of Biomedical, Life, Physical, and Social Sciences including Economics.

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AI

AI Gives Robot Hands Human-Like Dexterity > Your weekly selection of awesome robot videos

"Video Friday is your weekly selection of awesome robotics videos, collected by your friends at IEEE Spectrum robotics."

Source: IEEE Spectrum (9 May 2026)

AI

AI cuts wildlife tracking time from months to days

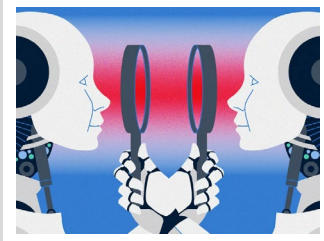
"Artificial intelligence can dramatically speed up the painstaking work of tracking wildlife with remote cameras, cutting analysis time from months or even a year to just days while producing nearly the same scientific conclusions as humans.

That's according to a new study led by researchers at Washington State University and Google, published in the Journal of Applied Ecology. The team tested whether a fully automated AI system could replace humans in processing hundreds of thousands to millions of camera trap images collected in Washington, Montana's Glacier National Park, and Guatemala's Maya Biosphere Reserve."

Source: Washington State University (7 May 2026)

AI

AI Is Starting to Build Better AI Recursive self-improvement is emerging, but humans are still in the loop



"The field of artificial intelligence was built on the premise that machines might someday improve themselves. In 1966, the English mathematician I. J. Good wrote that "an ultraintelligent machine could design even better machines; there would then unquestionably be an 'intelligence explosion,' and the intelligence of man would be left far behind." AI researchers have long seen recursive self-improvement, or RSI, as something to both desire and fear. Today, advances in AI are raising the question of whether parts of that process are already underway..

Today, large language models (LLMs) such as GPT, Gemini, Claude, and Grok extend this trend. One of their biggest use cases is to write code, including the code to produce future versions of themselves. In February, OpenAI reported that GPT-5.3-Codex was instrumental in creating itself, helping to debug training, manage deployment, and analyze evaluation results. Anthropic claims that the majority of its code is now written by Claude Code. These systems still rely on humans to direct and verify the work.."

Source: IEEE Spectrum (7 May 2026)

AI

AI-driven wearable patches help identify undetected hormone disruption in unexplained infertility

Source: mentalhappy

"Men and women who appear hormonally 'normal' may still have undetected disruptions in the timing and coordination of their reproductive hormones that could impair fertility, according to research presented at the 28th European Congress of Endocrinology in Prague. Now, a newly developed wearable skin sensor patch, combined with artificial intelligence (AI), not only can measure the quantity of reproductive hormones but also how reproductive hormones fluctuate over time, which could help patients and doctors detect infertility early and improve conception..."

Source: European Society of Endocrinology (8 May 2026)

AI

AI lets chemists design molecules by simply describing them

"Creating complex molecules usually requires years of experience and countless decisions, but a new AI system is changing that. Synthegy lets chemists guide synthesis and reaction planning using simple language, while powerful algorithms generate and evaluate possible solutions. The AI doesn't just compute—it reasons, scoring pathways and explaining which ones make the most sense.

Researchers led by Philippe Schwaller at EPFL have developed a new method that uses large language models (LLMs) as reasoning tools for chemistry. Rather than directly generating chemical structures, these models act as evaluators that guide existing computational systems.

The new framework, called Synthegy, combines traditional search algorithms with AI that can interpret chemical strategies written in natural language.

"When making tools for chemists, the user interface matters a lot, and previous tools relied on cumbersome filters and rules," says Andres M Bran, the first author of the Synthegy paper published in Matter. "With Synthegy, we're giving chemists the power to just talk, allowing them to iterate much faster and navigate more complex synthetic ideas."."

Source: Ecole Polytechnique Fédérale de Lausanne (5 May 2026)

AI

New AI method tackles one of science's hardest math problems

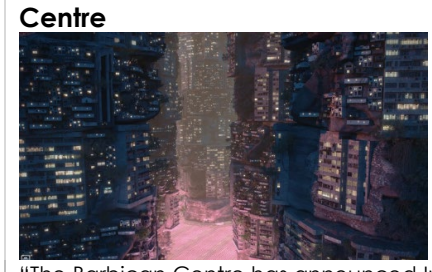
"Researchers at the University of Pennsylvania have introduced a new way to use artificial intelligence to tackle one of the most difficult challenges in mathematics: inverse partial differential equations (PDEs). These equations are essential for understanding complex systems, but solving them has long pushed the limits of both math and computing.

The team's solution, called "Mollifier Layers," improves how AI handles these problems by refining the math behind the process instead of simply increasing computing power. The approach could have wide-ranging applications, from decoding genetic activity to improving weather predictions.."

Source: University of Pennsylvania (6 May 2026)

ARCHITECTURE

In Other Worlds by Liam Young Reimagines Cities, Landscapes, and Climate Futures at the Barbican Centre



"The Barbican Centre has announced In Other Worlds, a major immersive exhibition by speculative architect, filmmaker, and artist Liam Young, opening from May 21 through September 6, 2026. Occupying three distinct locations within the Barbican complex, the Silk Street Entrance, The Curve gallery, and Car Park 5, the exhibition will transform the Brutalist cultural landmark into a sequence of cinematic environments examining architecture, infrastructure, climate futures, and planetary urbanism. Developed in collaboration with writers, scientists, filmmakers, musicians, and performers, the project brings together large-scale projections, LED installations, sound environments, graphic narratives, costumes, and speculative artifacts to explore how fiction and spatial storytelling can shape conversations around environmental and technological change.."

Source: Archdaily (8 May 2026)

ARCHITECTURE

This week we launched our series on parametricism

"This week on Dezeen, we kicked off our Parametricism series, which explores a theory of architecture that lays claim to becoming the defining style of the 21st century.

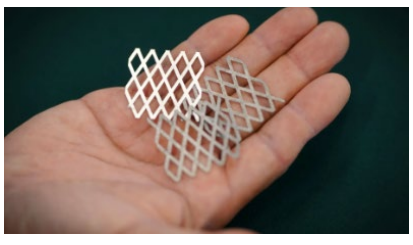
Architectural writer Owen Hopkins introduced the series in an overview of parametricism, which he called "the architecture of liberalism itself".

Our simple guide to parametricism explored the notoriously complex concept, while an interview with the man who coined the term, architect Patrik Schumacher, revealed that he is "not happy" with how fast the style is being adopted."

Source: University College Cork (3 May 2026)

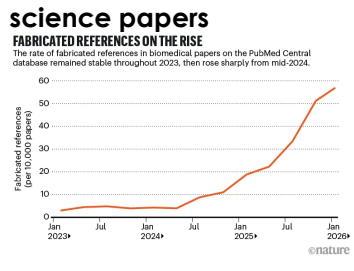
MATERIALS

"Cannot be explained" – New ultra stainless steel stuns researchers



SCIENTIFIC RESEARCH

Surge in fake citations uncovered by audit of 2.5 million biomedical science papers

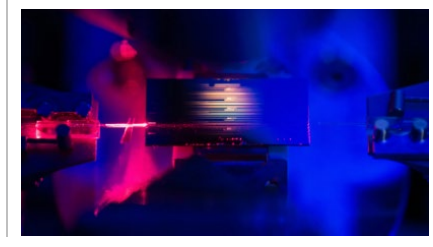


SEMICONDUCTORS

Chip Fab-in-a-Box Could Democratize Semiconductors

PHYSICS

Stanford's new chip boosts light 100x with surprisingly low energy



"A stainless steel breakthrough from the University of Hong Kong (HKU) could help solve one of the biggest problems facing green hydrogen: how to build electrolyzers that are tough enough for seawater, yet cheap enough for large scale clean energy.

Led by Professor Mingxin Huang in HKU's Department of Mechanical Engineering, the team developed a special stainless steel for hydrogen production (SS-H2). The material resists corrosion under conditions that normally push stainless steel past its limits, making it a promising candidate for producing hydrogen from seawater and other harsh electrolyzer environments.

The discovery, reported in *Materials Today* in the study "A sequential dual-passivation strategy for designing stainless steel used above water oxidation," builds on Huang's long running "Super Steel" Project. The same research program previously produced anti-COVID-19 stainless steel in 2021, along with ultra strong and ultra tough Super Steel in 2017 and 2020."

Source: University of Hong Kong (30 Apr 2026)

"An audit of 2.5 million academic papers has identified nearly 3,000 biomedical-science papers that contain fake references — ones that could not be traced to known publications.

The findings, published in The Lancet on 7 May1, are contained in the first academic study to estimate the scale of fake citations in the biomedical literature.

The authors designed an automated pipeline to screen papers from PubMed Central — a database of publicly accessible biomedical articles — published between January 2023 and February 2026.

Their work suggests that the contamination of papers with fake citations is a rapidly growing problem in biomedicine. There were 12 times more publications with fabricated citations in 2025 compared with 2023 (see 'Fabricated references on the rise')."

Source: Nature (3 May 2026)

"When Mitchell Hsing was a grad student at MIT, he and his classmates were doing cutting-edge things using what was essentially chip-industry cast-off equipment. Just imagine what could get done if everyone had their own small fabs to spin up prototypes or manufacture small batches of chips, he thought. The result is InchFab, a startup selling a $5 million to $15 million shipping-container-size clean-room system that can do just about everything a not-so-advanced fab can. The compact size comes as a result of InchFab using much smaller silicon wafers than today's multibillion dollar fabs do. Smaller wafers means fab equipment can be much smaller and way cheaper. InchFab now has customers all around the world, especially in places where people are looking to train up a chipmaking workforce ahead of planned new fabs..."

Source: IEEE Spectrum (6 May 2026)

"Light plays a central role in modern technology, powering everything from televisions and satellites to the fiber optic cables that carry internet data across the globe. Now, physicists at Stanford have developed a way to push light even further. They created a compact optical amplifier, about the size of a fingertip, that can strengthen light signals while using very little energy and maintaining full bandwidth.

Optical amplifiers work much like audio amplifiers, except they boost light instead of sound. Traditional compact versions require significant power to operate, which limits their efficiency. The new device, described in the journal Nature, overcomes this challenge by reusing much of the energy needed to run it…

The amplifier developed at Stanford can increase the intensity of a light signal by about 100 times while using only a few hundred milliwatts of power. That is far less energy than similar devices typically require. Because it is both efficient and small, it could run on a battery and be built into devices such as laptops or smartphones.."

Source: Stanford University (5 May 2026)