SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

Weekly Discovery

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16 November – 20 November 2026

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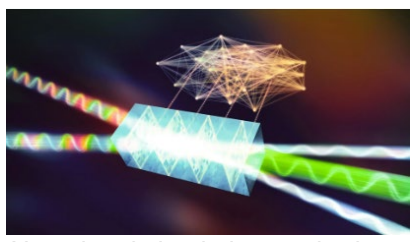
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AI • OPTICS • ENGINEERING

AI supercharges laser physics with a stunning 250x speed boost



An AI-assisted simulation method substantially accelerates calculations for nonlinear light–matter interactions. Faster optical modelling may help researchers optimise laser systems and photonic devices without repeated expensive numerical runs.

SPIE – The International Society for Optics and Photonics | 13 November 2026

AI • HEALTH TECH • BIOENGINEERING

AI-powered bionic eye breakthrough could help the blind see again



Researchers combine artificial intelligence with a visual prosthesis concept to translate camera information into personalized stimulation patterns. The approach could make artificial vision more useful, subject to further clinical and engineering testing.

University of California, Santa Barbara | 12 November 2026

ARCHITECTURE • MATERIALS • SUSTAINABILITY

From Source to Site: How Recovered and Engineered Materials Shape Design

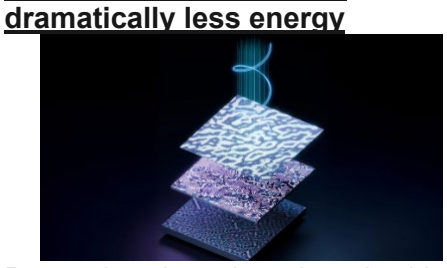


Case studies compare building with reclaimed components, recycled resources and locally engineered bamboo. The article argues that material availability, processing and irregular dimensions can shape architecture from the earliest design stage.

ArchDaily | 16 November 2026

ENGINEERING • MATERIALS • AI

A breakthrough in magnetism could make AI chips use dramatically less energy



Researchers investigated an ultrathin magnetic material and a dead-layer effect that limits device performance. Better control of magnetic order could support more energy-efficient memory or spintronic components for future processors.

Brown University | 12 November 2026

ENGINEERING • SUSTAINABILITY • ARCHITECTURE

What to Consider When Integrating Photovoltaics into Building Facades

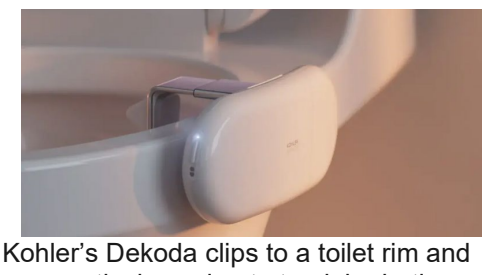


Examples of building-integrated solar façades illustrate how panel orientation, structural fixings, fire safety, simulation and costs must be coordinated early. A college façade has about 175 kWp nominal capacity with an estimated 123 MWh of annual generation.

ArchDaily | 12 November 2026

HEALTH TECH • SMART DEVICES • SENSORS

Kohler's gut-health tracker clips onto the toilet bowl

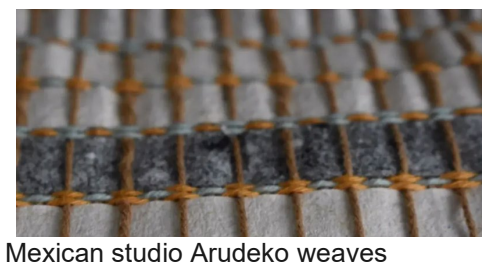


Kohler's Dekoda clips to a toilet rim and uses optical sensing to track hydration-related information and signs of blood in waste. The product raises questions about clinical usefulness, privacy and reliability of consumer health sensing.

Dezeen | 15 November 2026

MATERIALS • SUSTAINABILITY • PRODUCT DESIGN

Arudeko transforms discarded wool into paper-like material

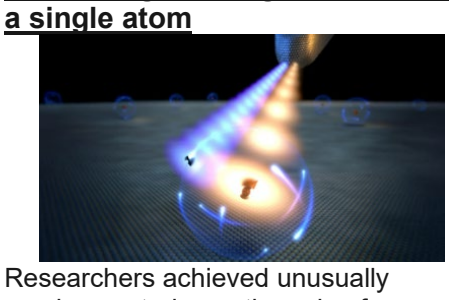


Mexican studio Arudeko weaves discarded dyed wool with recycled-paper strips to produce Bianni, a flexible translucent material for lighting and partitions. The material brings together waste reduction, traditional weaving skills and localized production.

Dezeen | 14 November 2026

QUANTUM • SENSORS • MATERIALS

Physicists defy expectations by controlling the magnetic heart of a single atom

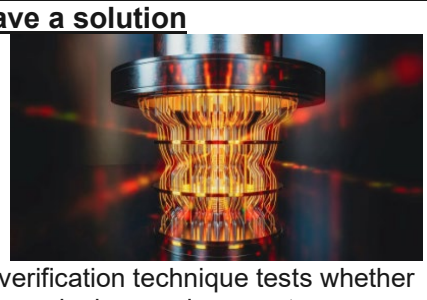


Researchers achieved unusually precise control over the spin of an individual atomic nucleus. Single-atom magnetic control is a key capability for potential quantum memories and ultra-sensitive quantum measurements.

Delft University of Technology | 15 November 2026

QUANTUM • COMPUTING • CYBERSECURITY

Quantum computers are getting too powerful to check. Scientists have a solution



A verification technique tests whether increasingly complex quantum processors behave as expected without requiring a complete classical simulation. Reliable benchmarking becomes essential as hardware reaches sizes beyond straightforward classical cross-checking.

University of Innsbruck | 16 November 2026

ROBOTICS • HEALTH TECH • AI

Can Robots Bring Stroke Surgery to Remote Hospitals?



A robotic system is being developed to allow specialist physicians to guide time-critical stroke interventions remotely. The approach could expand access to thrombectomy, provided clinical safety, telecommunications reliability and hospital workflows are validated.

IEEE Spectrum | 16 November 2026

ROBOTICS • AI • SENSORS

Why Skydio Built a Lopsided Drone



A deliberately asymmetrical aircraft design demonstrates how drone hardware can be shaped around practical sensing, payload placement and autonomous flight requirements rather than visual symmetry. The design reflects the trade-offs of real-world field robotics.

IEEE Spectrum | 15 November 2026

SUSTAINABILITY • MATERIALS • ENERGY

Scientists discover a surprisingly simple way to turn coffee waste into fuel



Researchers explore recovering oil-rich components from spent coffee grounds for conversion to biofuel. The approach treats common food waste as a feedstock while raising practical questions about solvent use, collection and scale-up.

Universitat Rovira i Virgili | 14 November 2026

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