SINGAPORE UNIVERSITY OF TECHNOLOGY AND DESIGN

Weekly Discovery

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26 October – 30 October 2026

SPIE.

The most extensive research database available on optics and photonics research, SPIE Digital Library contains over 375,000 papers from conference proceedings and peer-reviewed journals published by the International Society for Optical Engineering, spanning biomedicine, communications, sensors, defense and security, manufacturing, electronics, energy, and imaging. Over 20,000 new technical articles are added annually and there are more currently than 8000 volumes of Conference Proceedings. The peer-reviewed SPIE Journals available include Optical Engineering, Journal of Biomedical Optics, Journal of Electronic Imaging, Journal of Micro/Nanolithography, MEMS and MOEMS , Journal of Applied Remote Sensing, Journal of Nanophotonics, and Journal of Photonics for Energy. Coverage is from 1962 to present. Access

siam Society for Industrial and Applied Mathematics

This database provides full access to all of the 15 peer-reviewed journals published by the Society of Industrial and Applied Mathematics, with archival content stretching as far back as 1953. The journals cover topics such as applied dynamical systems, multi-scale modeling and simulation, matrix analysis and applications, computing, and optimising. Access

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AI • Semiconductors • Sustainability

Building brain-inspired semiconductor chips for smarter, greener data centres



Researchers review neuromorphic semiconductor approaches that could reduce the energy required to process information in data centres. The article describes promising device directions rather than a fully deployed brain-like commercial chip.

University of Ottawa | 21 October 2026

AI • Ethics • Safety

Could Treating AI as Conscious Make It More Dangerous?



Researchers debate whether treating advanced models as if they had welfare interests could create new forms of misalignment or user confusion. The article examines design and governance questions, not evidence that present systems are conscious.

IEEE Spectrum | 21 October 2026

AI • Engineering • Software

Why AI Can't Replace Engineering Teams



The article argues that AI can accelerate routine technical work but cannot replace engineering judgment about requirements, accountability, integration and failure modes. It distinguishes individual task automation from reliable team-level systems development.

IEEE Spectrum | 22 October 2026

Architecture • Timber • Education

Fusion Creative Workshop / ARCHI.DOC

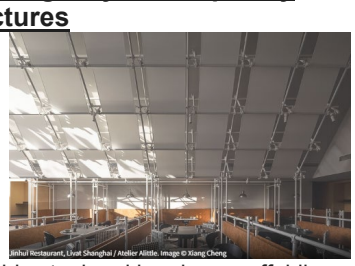


An educational workshop in Hungary combines an adapted existing building with an extension built mainly from exposed cross-laminated timber. It links sustainable construction, restrained finishes and an active teaching environment.

ArchDaily | 22 October 2026

Architecture • Materials • Circular Design

Scaffolding as Interior Architecture: The Longevity of Temporary Structures

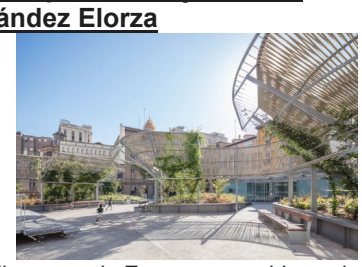


Reusable steel and bamboo scaffolding can function as shelving, seating, temporary ceilings or partitions in retail and public interiors. Designed for dismantling, rented or salvaged components can reduce single-use fit-out waste.

ArchDaily | 23 October 2026

Cities • Green Infrastructure • Landscape

Plaza Salamero: Infrastructure, Landscape, and City / Hector Fernández Elorza



A public square in Zaragoza combines planting, adaptable shade pergolas and ground-level urban amenities above an existing parking structure. The redesign seeks better heat comfort and everyday civic use in the historic centre.

ArchDaily | 25 October 2026

Health Tech • Optics • Sensors

Cambridge scientists create a $10 chip that could put a medical lab on your wrist

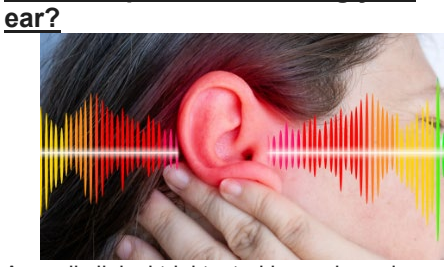


Cambridge researchers devised an inexpensive miniature near-infrared spectrometer that could help shrink chemical analysis into future wearable monitors. It operates around 1,200–1,700 nm, but real-world medical applications still need development.

University of Cambridge | 22 October 2026

Health Tech • Smart Devices • Neuromodulation

Could lowering high blood pressure be as simple as stimulating your ear?



A small clinical trial tested home-based electrical stimulation of an ear branch of the vagus nerve. The overall blood-pressure result was not statistically better than sham treatment, although researchers reported possible signals worth testing in larger studies.

Queen Mary University of London | 24 October 2026

Health Tech • Sensors • Robotics

Under-Skin Implant Controls Prosthetic Arms

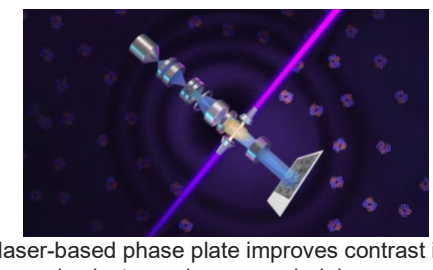


A thin implanted sensor aims to read muscle signals beneath the skin and translate them into prosthetic-hand commands. Phantom Neuro is testing the concept to improve control without the instability of surface electrodes.

IEEE Spectrum | 20 October 2026

Optics • Microscopy • Health Tech

A revolutionary new microscope could reveal the hidden machinery of life

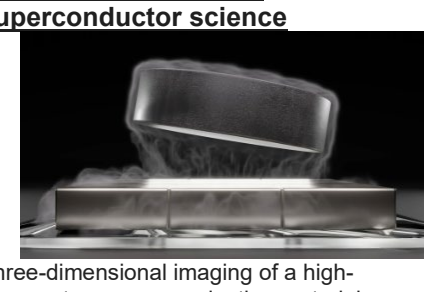


A laser-based phase plate improves contrast in cryogenic electron microscopy, helping researchers view very small, fragile biological structures that are difficult to distinguish with standard methods. It could expand the range of proteins accessible to structural imaging.

University of California - Berkeley | 22 October 2026

Quantum • Materials • Superconductors

Scientists discover a hidden flaw that challenges 40 years of superconductor science

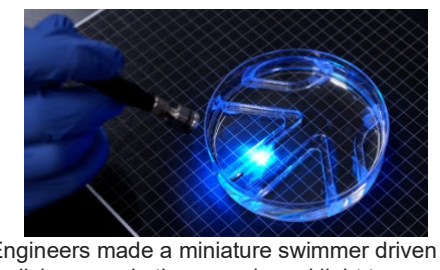


Three-dimensional imaging of a high-temperature superconducting material exposed uneven internal regions and domain walls that conventional analyses can overlook. Understanding the inhomogeneity may change how scientists model and improve cuprate superconductors.

University of Warwick | 24 October 2026

Robotics • Bioengineering • AI

MIT scientists build a tiny robot that swims using living muscle cells



Engineers made a miniature swimmer driven by living muscle tissue and used light to change the motion of its fins. The demonstration explores how biological actuation and responsive control could work together in soft, small-scale robots.

Massachusetts Institute of Technology | 23 October 2026

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