

physicsworld

MEDIA INFORMATION 2026

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More than
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active users
monthly

Magazine
readership
more than
92,000

More than
4.5 million
podcast downloads
across both titles
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weekly newsletter
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About us

A MESSAGE FROM THE EDITOR-IN-CHIEF



Whether you're a physicist in academia or industry, a student or someone who once did physics but is now in a different field, *Physics World* is here to keep you up to date with the latest breakthroughs across the whole of physics and beyond.

Thanks to an award-winning team of professional science writers and editors, it provides a global audience with a unique mix of daily news, opinion and analysis along with the highly respected Weekly and Stories podcasts.

Physics World aims to be the most trusted provider of physics news, with content that seeks to inform, educate, entertain and connect a global scientific readership.

Matin Durrani, editor-in-chief, *Physics World*

ELEKTA

"Our IOP representative and the science writers and management actually speak to us and check it's right for us – it's a win win. You can tell they care and want to help us achieve our goals."

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"Advertising with *Physics World* for several years has significantly boosted our product visibility within the academic and research communities. *Physics World*'s comprehensive reach and targeted audience have been invaluable in enhancing our marketing strategy and driving engagement with our products."



Topics covered on
physicsworld.com



Astronomy and space



Biophysics and bioengineering



Culture, history and society



Instrumentation and measurement



Mathematics and computation



Optics and photonics



People



Scientific enterprise



Atomic and molecular



Condensed matter



Environment and energy



Materials



Medical physics



Particle and nuclear



Quantum

Physics World magazine

PHYSICS WORLD



The most trusted and respected provider of science news, features and commentary for the global physics community.

Published for more than 30 years, with 12 issues a year, advertising in *Physics World* positions your products and services alongside our must-read content.

- Raise awareness of your brand to a large number of purchasing scientific professionals worldwide.
- Our topical and engaging content provides the perfect environment to convey your marketing message, and our selection of special issues provide the ideal platform to target specific sectors within physics.

Special topic issues in 2026

Physics World will publish three special issues in 2026 focused on specific topics



Quantum
– June

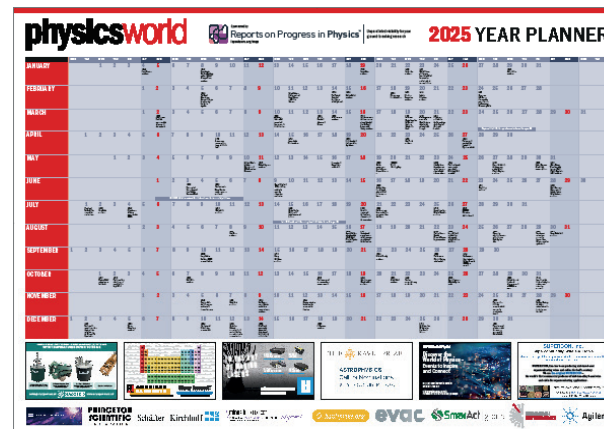


Optics and photonics
– September



Materials
– November

WALL PLANNER



Showcase your brand alongside our sought-after wall planner, distributed with the December issue of *Physics World*.

- Maximize your marketing budget by gaining 12 months of exposure from one activity.
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- Reach a wider audience. Wall planners are often used in communal areas or shared laboratories – this will enable your brand to gain visibility by a wider demographic.

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“Physics World provides great insights into how physics is applied to real world problems and can have a hugely positive impact on people’s lives”

MAGAZINE READER, Audience research

Physics World magazine

PROPOSED SHOW DISTRIBUTION

In addition to distribution to the membership of the Institute of Physics, *Physics World* is promoted at key events and relevant institutes or facilities throughout the year. Contact us for the most up-to-date list.

January issue

- SPIE BiOS
- SPIE.Photonics West

February issue

- Pittcon 2026

March issue

- 73rd JSAP Spring Meeting
- DPG Spring Meeting
- Fusion Industry Association Policy Conference
- APS Global Physics Summit

April issue

- IOP Nuclear Physics Conference
- 2nd Annual Fusion Fest
- 69th Annual SVC Technical Conference

May issue

- IPAC 2026
- 249th ECS Meeting
- EMRS Spring Meeting
- APS Division of Atomic Molecular and Optical Physics Meeting 2026
- IBIC 2026

June issue

- 64th Annual PTCOG Conference
- The Battery Show Europe
- Optica Quantum 2.0 Conference and Exhibition
- CEC/ICMC
- 52nd Plasma Physics Conference
- Condensed Matter and Quantum Materials 2026

July issue

- TBC

August issue

- SPIE Optics + Photonics 2026
- Quantum Tech World

September issue

- Chinese Physical Society Meeting
- World Nuclear Symposium 2026
- EMRS 2026 Fall Meeting
- MIT Careers Fair
- ASTRO 2026

October issue

- Battery Show USA
- 250th ECS meeting
- Big Science Business Forum

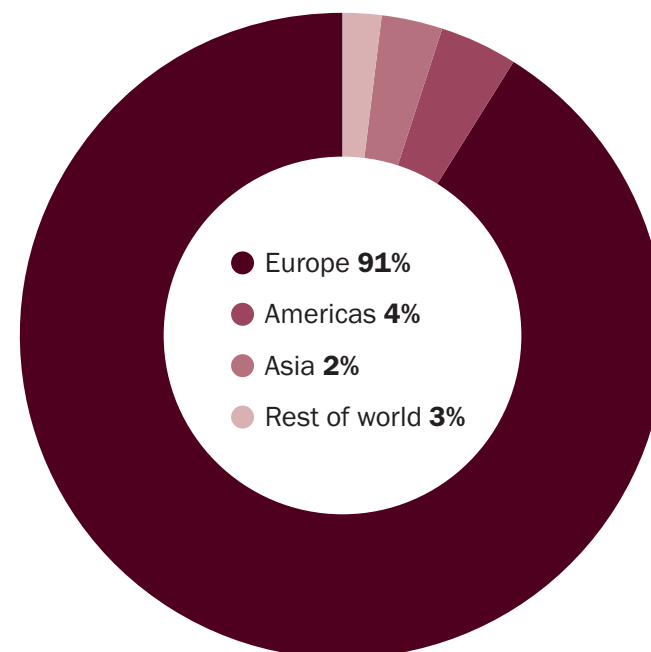
November issue

- 2026 American Vacuum Society 72nd International Symposium & Exhibition
- Semicon Europa
- Future Battery Forum 2026
- 2026 MRS Fall Meeting & Exhibit
- UK National Quantum Showcase

December issue

- TBC

GEOGRAPHICAL DISTRIBUTION OF MAGAZINE READERS



Physics World Digital

physicsworld

Magazine | Latest | People | Impact | Collections | Audio and video | TOPICS

magazine

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Browse the available editions of *Physics World* now

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Want to go straight to the latest issue?

Physics World September 2023 is now available as a PDF-based e-magazine or as individual online articles.

Read the issue here

Want to find back issues?

Quick links to all the previous editions of *Physics World* are available in the [magazine archive](#), including our free-to-read subject-focused *Briefings* series and the *Physics World Careers* guide.

Got a problem or want to know more?

Check out our [FAQs area](#). You can find out information about accessing the content, using the e-magazine and offline options, plus details of who to contact if you need more support.



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VIDEOS

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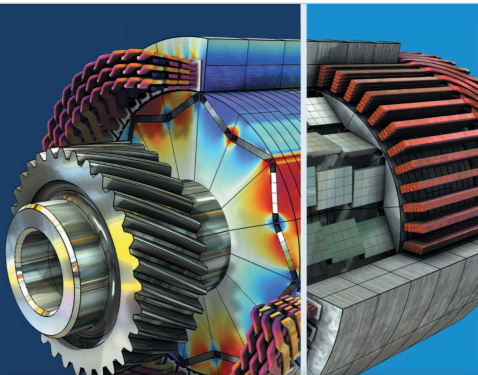
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- Upgrade your print advert in the digital to include audio or video.

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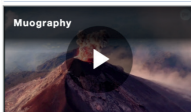
COMSOL

Contents: September 2023

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Physics World editions discuss their highlights of the September issue

0:00 / 11:46



Microscopy

Cosmic insights Using muons to peer into volcanoes and cyclones. To learn more, read our feature on pages 25–26.



Cold start The early history of laser cooling, part one of a series of three features 28



Carriers meet Nicola Spadaro: researching transformative materials 30

Quanta

Research Updates

Puzzle over two-faced star • Head of short fast radio bursts • Squid-like material controls light • JWST finds hot on early universe • Fungi used to build structures • Laughlin state seen in ultracold atoms • Monitor detects coronavirus in real time

News & Analysis

New 14-000 superconductor causes a stir – but rivals find it hard to replicate claims • Theorist reviews prefer significance over rigor • Space Prize targets a welcoming space industry • Warning over computational scientist's carbon footprint • New head for Oak Ridge National Laboratory

Comment

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Writing memorials Robert P. Crease

Forum

How to think like a scientist James Kakalios

Features

Using cosmic muons to predict natural disasters 23

Michael Allen talks to the researchers who are using cosmic muons to plumb the depths of volcanoes, tropical cyclones and even meteotsunami waves

Cold: the early days of laser cooling 28

In the first of a three-part series, Chad Oates tells the story of the pioneering first years of laser cooling and how the technique transformed atomic physics

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Engineering materials that could change the world Laura Hilcott • Ask me anything: Sara Webb

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Shredinger's equation Philip Moriarty

On the cover

Using muons to peer into volcanoes and cyclones 25 (Shutterstock, Denis_Milne)



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Physics World September 2023

Physics World is published monthly as 12 issues per annum volume by IOP Publishing Ltd, 17 The Clarendon, Bristol, Avon, Bristol, BS2 0UR, UK

Physics World Briefings

Physics World Briefings are the subject-focused supplements to Physics World.

Our supplements offer a deeper dive into a key subject in physics, enabling readers to fully immerse themselves into the subject area. The digital version of each supplement offers all the enhanced features of our main issue but is free to access, ensuring high visibility. With a 12-month distribution schedule, they are sent to key conferences, events, facilities and society partnerships throughout the year. Contact us for the most up-to-date distribution list.



PARTICLE & NUCLEAR BRIEFING

Published in May

Show distribution

- IPAC26



INSTRUMENTATION & VACUUM BRIEFING

Published in August

Show distribution

- IVC
- SVC
- AVS



BIG SCIENCE BRIEFING

Published in October

Show distribution

- Big Science Business Forum

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Helping scientists working in academic and industrial research stay up to date with the latest breakthroughs in physics and interdisciplinary science, we provide a global audience with a unique mix of daily news, opinion and analysis from our award-winning team of science writers and editors.

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monthly page
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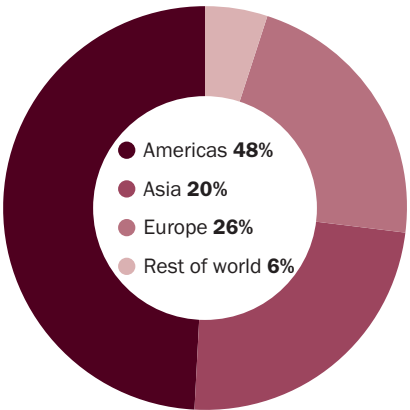
Target
68,000
weekly newsletter
subscribers

More than
235,000
active users
monthly

Online editorial specials
Nobel prize (October)
Breakthrough of the Year (December)
Physics World Live (throughout the year)

Show preview articles
SPIE.Photonics West
IPAC26
APS Global Physics Summit
AAPM
2026 MRS Fall Meeting
Big Science Business Forum

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AVERAGE MONTHLY CHANNEL PAGE VIEWS

Topic	Average monthly channel page views
Astronomy and space	23,800
Atomic and molecular	1700
Biophysics and bioengineering	6700
Condensed matter	6000
Culture, history and society	13,600
Environment and energy	7500
Instrumentation and measurement	5300
Materials	7600
Mathematics and computation	6700
Medical physics	5900
Optics and photonics	2700
Particle and nuclear	16,500
People	9300
Quantum	47,500
Scientific enterprise	6500

*Figures are from Google Analytics, October 2026

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optics and photonics

OPTICS AND PHOTONICS | RESEARCH UPDATE

All-optical processors could compute any linear transformation, machine learning reveals

25 Oct 2021

Transforming light: illustration of how an arbitrary linear transform can be achieved in an all-optical system using diffractive surfaces (Courtesy: Ozcan Lab/UCLA)

Researchers in the US have shown how all-optical processors could be used to carry out a range of linear mathematical transformations, including Fourier transforms. Using machine learning techniques, Onur Kulce, Aydogan Ozcan and colleagues at the University of California, Los Angeles, generated the blueprint for set of diffractive surfaces that can be used to produce specific optical outputs from any arbitrary input. When implemented in the lab, the approach could provide an alternative for calculating linear transformations using conventional computers.

To process information, computers often use linear transformations to perform mathematical operations on data. A classic example is the Fourier transform, which converts a time sequence of data – such as sound captured by a microphone – into a representation of the frequencies present in the data.

The speed at which such transformations can be done is limited by the processing power of electronic computers, but recently researchers have been exploring the possibility of using purely optical devices to do the task. Since optical waves travel effortlessly at the speed of light, this approach could one day be used to process information at far higher speeds and using far less energy than conventional computers.

Metamaterials and metasurfaces

Recent advances in photonics have led to the design of new metamaterials and metasurfaces, which are engineered to diffract light in very specific ways. As wavefronts of light interact with these materials, the light is transformed in ways that depend on the geometry of the surface. By carefully adjusting the properties of diffractive surfaces, researchers can control the nature of the linear transformations they cause in light waves.

In their study, Kulce, Ozcan and colleagues showed how a series of diffractive surfaces could be used to achieve any arbitrary transformation between input and output waves. To do this, they used machine learning methods to design the surfaces required for specific

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Optics & Photonics Briefing
This issue explores lasers and detectors, solar power, medical imaging and high-resolution displays

quantum approved.
Laser Rack Systems

Quantum Technology / metrology
Industry Standards
TOPICA PHOTONICS

Top level
MPU
Sticky
300 x 250 pixels

Quantum Design
fusion scope
TRUE ARM | SEM
Correlative Microscopy

physicsworld

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Editor's choice

QUANTUM COMPUTING | RESEARCH UPDATE

Rapidly swapping photons make a high-quality quantum gate

Experiment with two superconducting cavities could lead to better quantum computers

POLICY AND FUNDING | NEWS

Delight as UK strikes deal to join the EU's flagship Horizon Europe funding programme

The UK will also join the EU's Copernicus Earth observation programme but not its Euratom fusion initiative

DIAGNOSTIC IMAGING | RESEARCH UPDATE

Iron oxide nanoparticles boost the contrast in low-field MRI scanners

Researchers at NIST are investigating ways to expand the clinical applications of portable low-field MRI systems

TOPICAL MATTER | RESEARCH UPDATE

Quantum anomalous Hall insulator carries current in its interior, not just its edges

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Research updates

ASTROPARTICLE PHYSICS | RESEARCH UPDATE

Neutrino fluids in supernovae could point to new physics

ENVIRONMENT AND ENERGY | RESEARCH UPDATE

Fallout from nuclear weapons testing explains the 'wild boar paradox' of radioactive meat

BIOPHYSICS | RESEARCH UPDATE

Study in astronauts could improve health in space and on Earth

VACUUM AND CRYOGENICS | RESEARCH UPDATE

Cold atoms used to create reliable pressure gauge for ultrahigh vacuum

Device could be used in particle accelerators and gravitational-wave detectors

NANOMEDICINE | RESEARCH UPDATE

Researchers 'tattoo' gold nanopatterns onto live cells

New technique can print living cells and tissues with flexible arrays of gold nanowires and nanowires

CONDENSED MATTER | RESEARCH UPDATE

Demon quasiparticle is detected 67 years after it was first proposed

Researchers observe Pines' demon unexpectedly after bombarding exotic metal with electrons

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PW LIVE

Welcome to physicsworld | L | ▼ • E

Physics World has partnered with prestigious IOP Publishing journal *Reports on Progress in Physics* to bring you a series of online panel discussions in which *Physics World* editors talk to leading scientists about a hot topic in physics. In each of these hour-long events, you will be able to put questions to panellists in a live Q&A.

2025 series

Four panel discussion were held, which proved to attract a high number of registrations. Each one can be sponsored – contact us for details.

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ASTRONOMY AND SPACE

Monday 10th November 2025
9 p.m. GMT

Space junk – and how to solve it

Space is an amazing resource but the growing amount of space junk is threatening our ability to explore its potential and carry out astronomical observations from Earth, it could even pose hazards to the atmosphere. The panellists on this episode of Physics World Live will explore the problem of space junk and how we can begin to solve it.

Speakers:
Daniel Murphy US National Oceanic and Atmospheric Administration (NOAA) Chemical Sciences Laboratory in Boulder, Colorado
Katherine Courtney Global Network on Sustainability in Space (GNOSIS)
Alice Gorman Flinders University in Adelaide, Australia

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220 registrations

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MEDICAL PHYSICS

Thursday 26th September 2025

How medical physics can exploit quantum technologies

From advanced disease diagnostics to improved medical treatments, quantum-based applications are beginning to play a key role within healthcare. Quantum technologies could also help speed drug development and ensure the protection of sensitive medical data. In this Physics World Live event, we take a look at how medical physics can make the most of the burgeoning field of quantum science.

Speakers:
Nitesh Priggett, University of Glasgow, UK
Matt Brooks, University of Nottingham, UK
Pawel Miskolc, Jagiellonian University, Poland

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554 registrations

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QUANTUM

Tuesday 17th June 2025

How quantum tech is boosting quantum fundamentals

Advances in quantum physics have spawned some incredible technological developments that have created a whole new ecosystem of 'quantum 2.0' businesses exploring weird quantum effects such as entanglement and superposition. To mark the International Year of Quantum Science and Technology, this event will explore how these technological advances are now winning in science, allowing physicists to carry out previously impossible experiments that could reveal new breakthroughs in the fundamentals of quantum theory.

Speakers:
Artur Ekert, professor of quantum physics and cryptography at the University of Oxford
Stephanie Simmons, chief quantum officer at Photonic and co-chair of the advisory board to Canada's National Quantum Strategy
Elise Chaff, associate professor of philosophy, City University of New York

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606 registrations

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CAREERS

Wednesday 9th April 2025

What can you do with a physics degree?

The beauty of a physics degree is that it can open doors to countless careers opportunities. But sometimes the sheer breadth of options can be daunting for physics students and recent graduates. In this Physics World Live panel, careers experts will guide you through the career maze.

Speakers:
Crystal Bailey, director of programs and inclusive practices at the American Physical Society
Tamara Chelard, member of the Chartered Physicist review at the Institute of Physics
Alexei Vengas-Gomez, chief executive and founder of Quinica
Teresa Comberford, features editor of Physics World and editor of the annual Physics World Careers guide

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2026 series

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November

Astronomy AND SPACE

Space junk – and how to solve it

📅 10.11.2025 ⌚ 9 p.m. GMT/4 p.m. EST

Register now to join the audience on 10 November

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Fabrication and device performance of NiO/Ga₂O₃ heterojunction power rectifiers

📅 19.11.2025 ⌚ 6 p.m. GMT/ 1 p.m. EST

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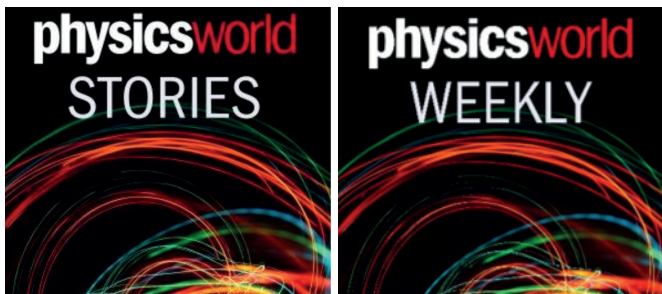
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Physics World stories	Monthly	10,600 per episode
Physics World weekly	Weekly	6200 per episode

*Figures are from Blubrry, November 2025

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both titles since
launch



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Highlights	Weekly	68,000
Materials	Quarterly	23,000
Medical physics	Monthly	19,300
Environment	Bi-annual	22,000
Careers	Bi-monthly	8000
Optics	Bi-annual	5600
Quantum	Bi-annual	1249
Particle & nuclear	Quarterly	800

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“Creating our native articles was a very straightforward process – the majority of the legwork is done by the Physics World journalist. Working to a short set of our requirements, he was able to create a Physics World article that supports our marketing strategy, whilst reporting on the scientific research that our products are used for.”

RUSSELL HARDY, UHV

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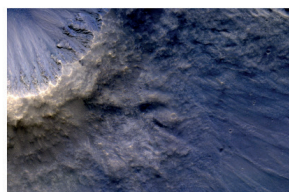
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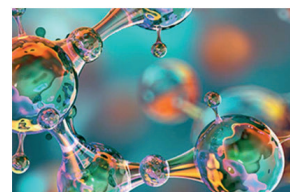
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Environment and energy	1,315,000
Instrumentation and measurement	474,000
Materials	628,000
Mathematics and computation	3,411,000
Medical physics and biophysics	
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Particle and nuclear physics	183,000
Plasmas	983,000
Quantum science	701,000

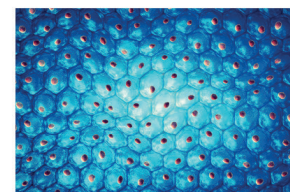
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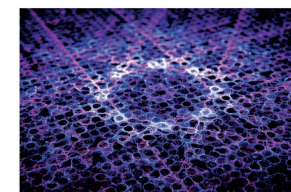
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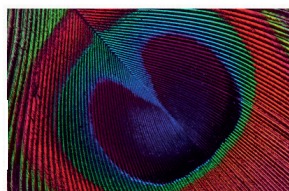
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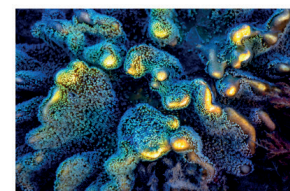
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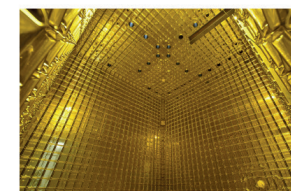
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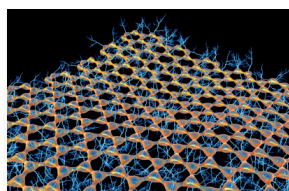
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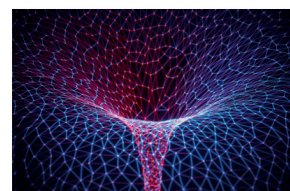
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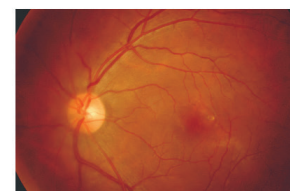
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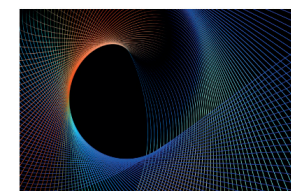
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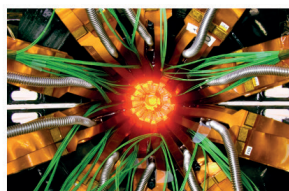
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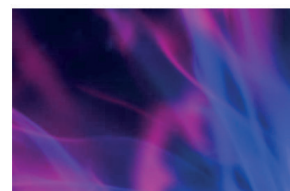
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Secondary electron emission from reticulated carbon foam surfaces using direct measurements and spectroscopic analysis

Angelica Ottaviano*, Gary Wan, Yevgeny Raitses, Evan T Ostrowski, Shota Abe, Bruce E Koel and Richard E Wirz

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Abstract

This study investigates secondary electron emission (SEE) characteristics of reticulated foams using direct measurements and analytical modeling. Total SEE was quantified, revealing suppression of up to 44% in carbon foam structures compared to planar graphite surfaces. An optimal geometric configuration was identified and supported by analytical models. SEE angular dependence experiments showed diverse behaviors: fiber-like behavior and directional dependence for pore and ligaments on the mm scale, with fuzz-like characteristics when the foam features are between 10–100 μm. Electron energy analyzer measurements showed that carbon foams preferentially suppress inelastic backscattered electrons (BSEs) more so than true secondary electrons (SEs). The analysis indicated a larger fraction of low-energy SE generation in foams compared to flat surfaces due to increased emission from curved fiber ligaments and tertiary SEs from high-energy BSEs. These findings have implications for design and optimization of materials with tailored electron emission properties for applications like plasma-facing components, spacecraft materials, and accelerator surfaces.

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1. Introduction

Secondary electron emission (SEE) occurs when an energetic primary particle, such as an electron, impacts a material surface [1, 2]. SEE influences plasma-surface interactions, for example by modifying sheath properties and associated heat fluxes to walls [3], as well as by contributing to anomalous transport and plasma discharge instabilities [4].

In many charged particle applications, SEE is an adverse effect. It causes multipactor breakdown in radio-frequency (RF) components [5, 6], contributes to plasma cooling in electric thrusters [7], and may lead to anomalous charging of spacecraft surfaces [8–10]. SEE may also cause performance degradation in particle accelerators by initiating electron cloud build-up that drives beam instabilities [11, 12]. Experimental studies have quantified SEE from fusion plasma-facing materials such as lithium and lithium compounds [13] and nanostructured tungsten fuzz [14], as well as from dielectric materials relevant to Hall thruster channel walls, including boron nitride [15]. Numerical models that explicitly include SEE have also demonstrated its impact on sheath formation [16], electron velocity distributions in confined plasmas [17], and avalanche processes in liquids [18]. In geospace contexts, SEE affects spacecraft-plasma interactions and wave excitation [19, 20].

Recent studies have addressed several aspects of SEE, including the difficulty of obtaining reliable

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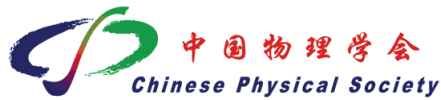
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We can work with you to create new campaigns or translate existing ones into Chinese language, as part of this advertising package.

More about Wuli

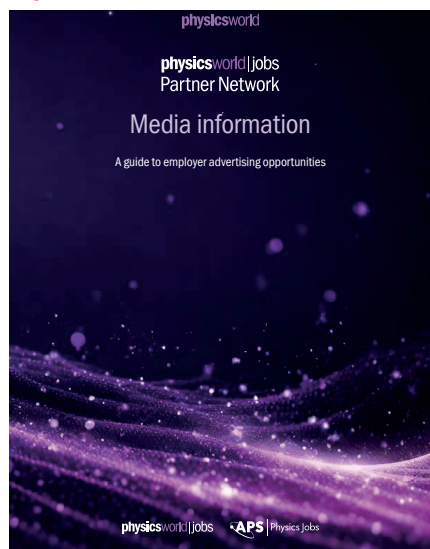
- Wuli has a printed circulation of 9000.
- Wuli's website has a readership of approximately 500,000.
- The target audience are graduate students and above.

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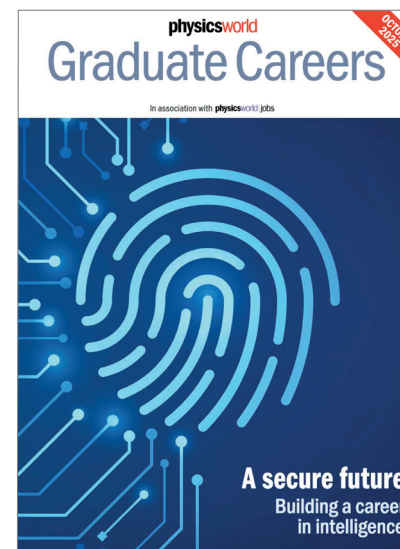
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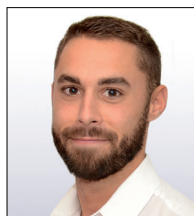
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