

Celebration of Physics

Pulling together, pushing boundaries



The Institute of Physics (IOP) Awards recognise and reward excellence in people and teams who have made outstanding and exceptional contributions to the discipline of physics.

They reflect the breadth of work in the physics community across academia, industry, education and outreach.

Previous winners constitute a roll call of those who have shaped physics in the 21st century. It is our aim to identify and honour physicists who are making remarkable contributions today, and to encourage younger members of the community to achieve even greater success in the future.



Welcome to the 2024 Awards

On behalf of the Institute of Physics, I want to congratulate all of the 2024 IOP Award winners. Each one has made a significant and positive impact in their profession, whether as a researcher, teacher, industrialist, technician or apprentice and I hope they are incredibly proud of their achievements.

There is so much focus today on the opportunities generated by a career in physics and the potential our science has to transform our society and economy, and I hope the stories of our winners will help to inspire future generations of scientists.

**Professor Sir Keith Burnett CBE FRS CPhys FInstP FLSW
IOP President**

Bronze Early Career Medals

The Bronze Early Career Medals and Prizes are awarded for exceptional early career contributions to physics.

Daphne Jackson Medal and Prize

Associate Professor Daniel Cottle CPhys MInstP

University of Birmingham

For exceptional contributions to physics education by linking physics teacher training with widening participation in university physics, and pioneering a whole life-cycle approach to addressing issues of inclusion.

Henry Moseley Medal and Prize

Assistant Professor Rohit Chikkaraddy MInstP

University of Birmingham

For outstanding contributions to extreme confinement of light at atomic scales to see the invisible interaction of light with molecular bonds at room temperature.

James Clerk Maxwell Medal and Prize

Dr Frank Schindler MInstP

Imperial College London

For numerous conceptual contributions to condensed matter physics; in particular, the prediction of higher-order topological insulators, novel quantum materials whose lossless edge states promise energy-efficient microelectronics in the post-silicon age.

Jocelyn Bell Burnell Medal and Prize

Dr Catherine Elizabeth Regan MInstP

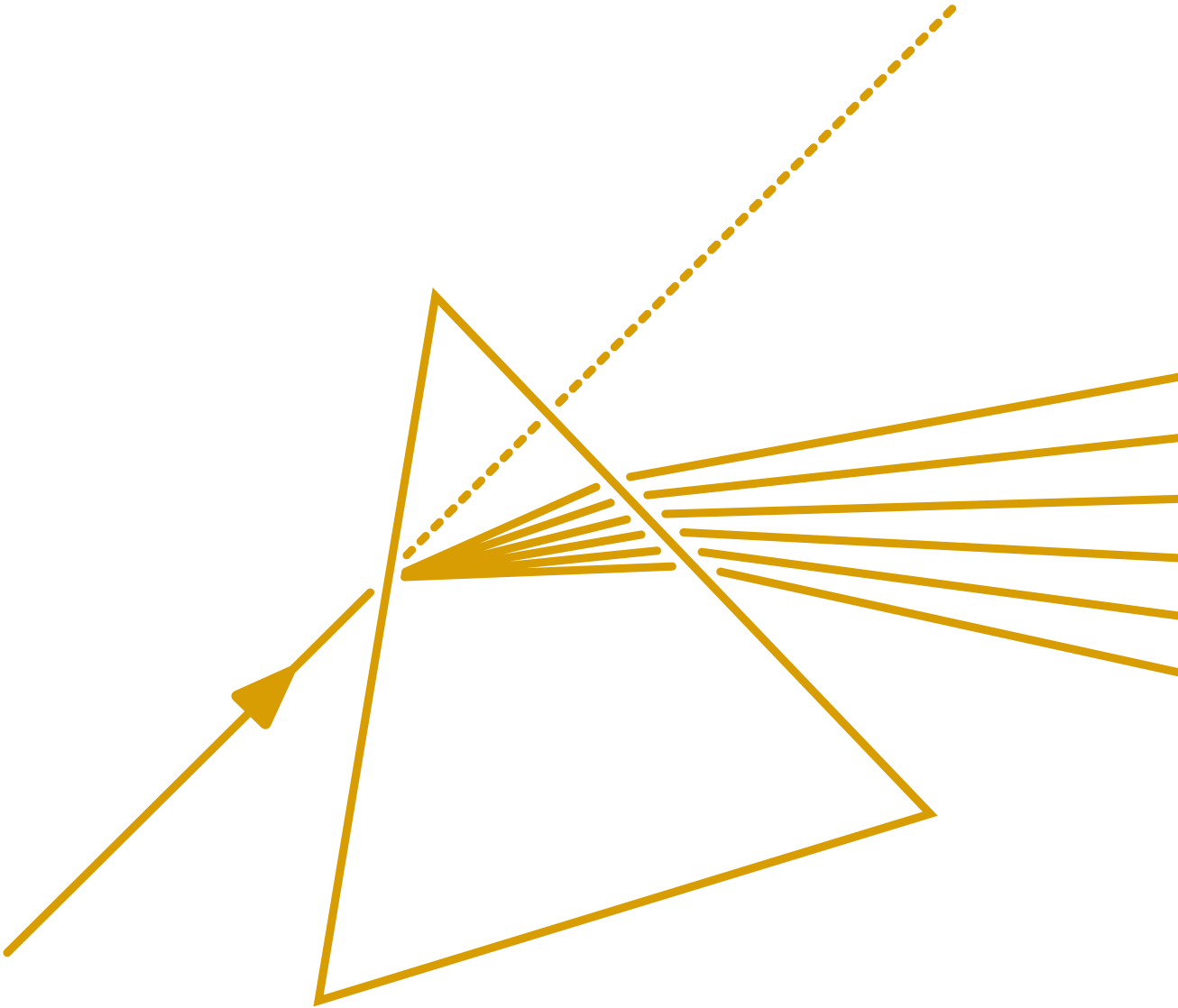
Mullard Space Science Laboratory,
University College London and West Virginia University

For exceptional leadership of the Eyes on Mars project, engaging diverse audiences and inspiring our next generation of scientists, alongside high-impact and novel research on Martian dust storms.

Lara Stafford MInstP

Theatre of Science

For revolutionising how home-educating families access physics education, using drama and humour to support the learning of tens of thousands of children from Key Stage 1 to International General Certificate of Secondary Education.



Silver Subject Career Medals

The Silver Subject Medals and Prizes are awarded for distinguished contributions to physics.

Dennis Gabor Medal and Prize

Professor Michael Kosch FInstP

Lancaster University

For image processing techniques, derived from pioneering auroral research, that have been deployed in hundreds of automated cameras for wildfire detection, realising huge savings in timber and CO₂ emissions.

Edward Appleton Medal and Prize

Professor Nicolas Bellouin FInstP

University of Reading

For pioneering use of satellite observations and simulations to quantify climate impacts of atmospheric particles on Earth's climate through advancing understanding of their interaction with sunlight, clouds and vegetation.

Ernest Rutherford Medal and Prize

Professor Alison Bruce CPhys FInstP

University of Brighton

For seminal contributions to the understanding of shapes and dynamical symmetries in atomic nuclei and inspirational leadership in international nuclear structure physics research.

Fred Hoyle Medal and Prize

Professor Isabelle Baraffe FInstP

University of Exeter and CRAL/CNRS/ENS de Lyon

For pioneering research in theoretical astrophysics that has revolutionised the understanding of the structure and evolution of stars and planets.

James Joule Medal and Prize

Professor Carole Tucker FInstP

Cardiff University

For outstanding work on the development and provision to the worldwide scientific community of metamaterial-based quasi-optical components for far infrared to millimetre wavelength astronomical instruments and other applications.

Joseph Thomson Medal and Prize

Professor Janne Ruostekoski FInstP

Lancaster University

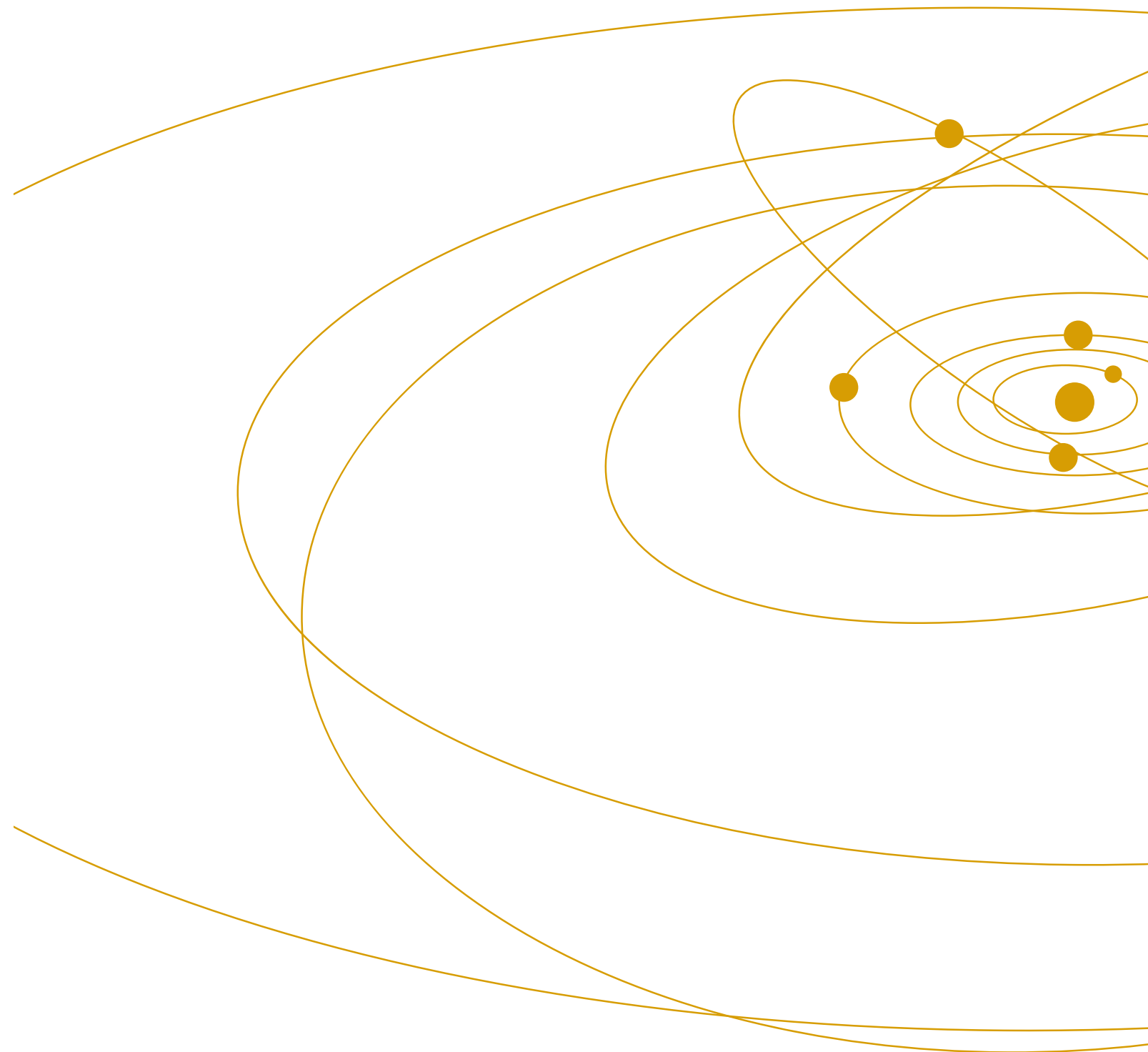
For outstanding contributions to the fundamental understanding of cooperative interactions between light and atomic ensembles, as well as for pioneering efforts in harnessing these interactions for applications.

Rosalind Franklin Medal and Prize

Professor Nicholas Stone CPhys FInstP

University of Exeter

For pioneering use of light for diagnosis and therapy in healthcare; most significantly, for developing novel Raman spectroscopic tools and techniques for rapid in-vivo cancer diagnosis and monitoring.



Gold Medals

The Gold Medals and Prizes are awarded for outstanding and sustained contributions to physics by a person of international reputation.

Katharine Burr Blodgett Medal and Prize

Dr Christopher Dorman OBE FInstP

Coherent

For contributions to the laser industry, through executive leadership and community engagement.

Lawrence Bragg Medal and Prize

Professor Stephen John Blundell CPhys MInstP

University of Oxford

For contributions to physics scholarship and education through the publication of widely used and influential physics textbooks.

Michael Faraday Medal and Prize

Professor Laura Herz FInstP

University of Oxford

For pioneering advances in the photophysics of next-generation semiconductors, accomplished through innovative spectroscopic experiments.

Apprentice Employer Awards

The Apprentice and Apprentice Employer Awards celebrate the contributions that apprentices make to physics, and recognise employers that demonstrate their commitment and contribution to scientific and engineering apprenticeship schemes.

Apprentice Awards

The Apprentice Award enables the community to recognise and celebrate the skills and experiences of science and engineering apprentices and their contribution to physics.

The Lee-Lucas Award for Start-Up Enterprises

The Lee Lucas Award recognises and celebrates very early stage companies taking innovative products into the medical and healthcare sector.

Apprentice Employer Award

National Grid

For creating a diverse and supportive apprenticeship scheme that enables apprentices to develop technical knowledge, interpersonal skills and collaborate on projects aiming to achieve net zero.

Apprentice Award

Daniel Smith

National Physical Laboratory

For supporting the development of new technologies, managing a research project underpinning the realisation of next-generation nuclear reactor technologies and an outstanding contribution to outreach.

Lee-Lucas Award

Crainio

For the development of a novel technology that allows the simple, affordable, risk-free and non-invasive measurement of intracranial pressure, a vital indicator of brain health after a head injury.

Business Start-Up Awards

The Business Start-up Award recognises and celebrates young companies with a great business idea founded on a physics invention, with great business growth potential and/or the potential of significant societal impact.

Business Start-Up Awards

Metasonixx

For the development of mass-produced acoustic metamaterial panels that allow airflow, enabling improvements to noise management and ventilation, and facilitating net-zero industrial ventilators and heat pumps.

Phlux Technology

For the development of patented semiconductor technology for infrared light sensors with 12X higher sensitivity than existing state-of-the-art devices, delivering unprecedented levels of speed and sensitivity for 3D imaging.

Silveray

For the development of the first generation of flexible colour X-ray cameras based on proprietary semiconductor materials, bringing new analytical capabilities in industrial markets, and transforming the future of medical diagnostics.

Business Innovation Awards

The Business Innovation Award recognises and celebrates small, medium and large companies that have excelled in innovation, delivering significant economic and/or societal impact through the application of physics.

Business Innovation Awards

Covesion

For the research, development and manufacture of PPLN technologies, facilitating highly efficient frequency conversion, providing access to wavelengths that are presently unavailable from commercial laser sources.

FeTu

For the development of a revolutionary heat engine, generating electrical power from waste heat and geothermal sources as low as 40°C.

Geoptic Infrastructure Investigations

For establishing cosmic ray muon imaging as a primary technique in assuring the safety of the UK's railway tunnels from concealed shafts, effectively solving Network Rail's hidden shaft location challenges.

Oxford Ionics

For the development of quantum computers with electronic qubit control and scalable architecture that enables world-leading performance with chips that can be manufactured at scale on standard semiconductor production lines.

Teachers of Physics

The Teachers of Physics Awards celebrate the success of secondary school and college physics teachers who have raised the profile of physics and science.

Teachers of Physics



Dr Katharine Bridge MInstP

Haberdashers School For Girls

For teaching expertise, passion and enthusiasm for the subject, inclusive teaching, and outstanding leadership of professional development within the school and local area.

Ian Delaney MInstP

St Marys Catholic High School

For exceptional knowledge and classroom practice, outstanding development of pupils, and support of colleagues.

Victoria Horlock MInstP

Bedford Academy

For passion for the subject, outstanding development of pupils, support for the development of colleagues, outreach work with local primary schools and exceptional work to promote inclusivity.

Everton McClymont MInstP

Bonus Pastor Catholic College

For outstanding teaching style, exceptional work with supporting local primary schools, exemplary work with pupils through extracurricular activities, and promotion of underrepresented groups.

Ali Panju MInstP

Wyggeston Queen Elizabeth College

For subject knowledge, enthusiasm and commitment to students, and exceptional work with local schools and nationally in providing high quality teaching and learning of physics for both pupils and teachers.

Dr James Perkins CPhys MInstP

Queen Elizabeth's Grammar School

For subject expertise, curriculum innovation and skilled teaching, raising the profile of physics in the school, development of staff in local schools, and outstanding work with pupils through extracurricular activities at a local and national level.

Kulvinder Randhawa MInstP

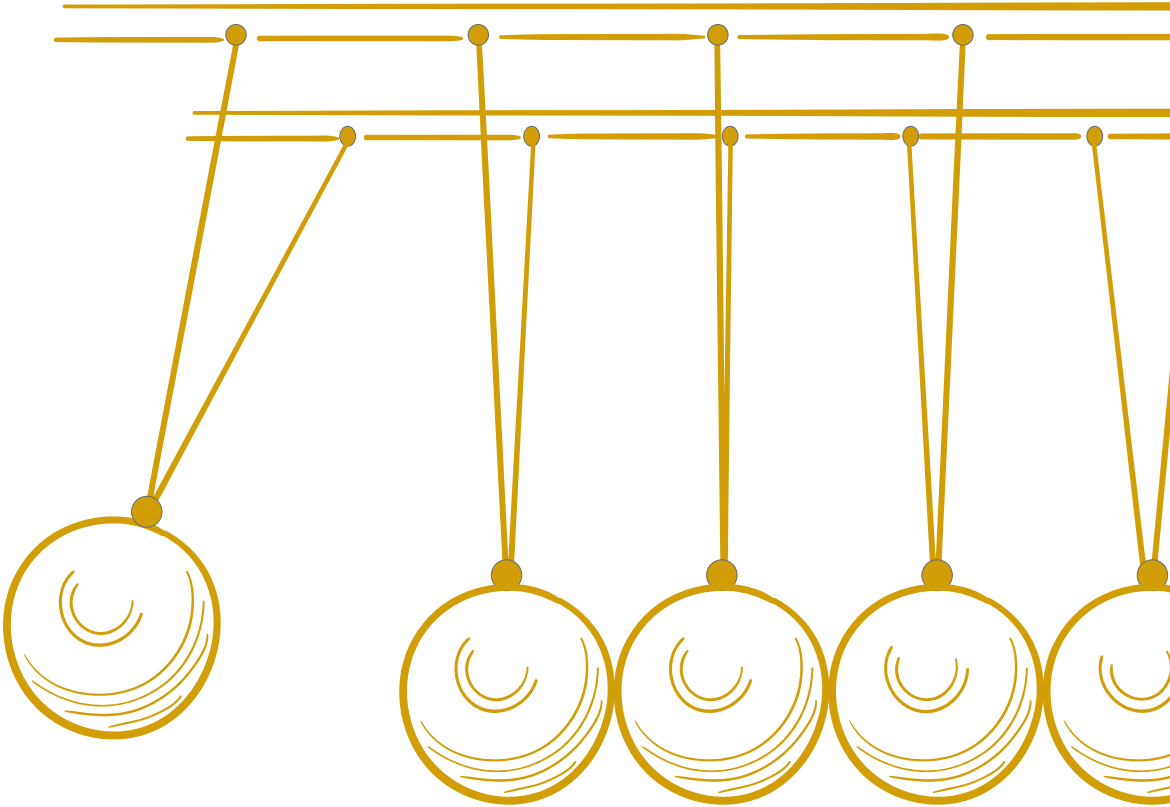
Oldham Sixth Form College

For inspirational professional development and support of colleagues in local secondary schools, exemplary work with technicians, and support for pupils through extracurricular activities.

Jonathan Williams MInstP

Ysgol Maes Y Gwendraeth

For exceptional classroom practice and development of pupils, outstanding support and development of colleagues, trainee teachers and staff in local schools, outstanding work with pupils through extracurricular activities, and provision of materials at a national level.



Technician Award

The Technician Award enables the community to recognise and celebrate the skills and experience of technicians and their contribution to physics. With the aim of raising the professional status of technicians, the IOP Technician Award highlights the diverse role of technicians in education, research and industry.

Technician Award

Nick Mitchener MInstP

Ferndown Upper School,
School and Further Education Award

For outstanding support in the physics teaching community and extensive dissemination of physics knowledge and best practice among technicians and teachers, both locally and in the wider community.

Dr Ken W. Smith MInstP and Dr David R. Young MInstP

Queen's University Belfast,
Higher Education and National Research Facility Award

For internationally recognised technical expertise, exceptional software skills and dedication to astrophysics, enabling world-leading discoveries and the formation of a European supernova community.

Honorary Fellowships

An Honorary Fellowship is the highest accolade presented by the IOP to reflect an individual's exceptional services to physics.

Honorary Fellowships

Professor David Birch CPhys Hon.FInstP

University of Strathclyde

For championing UK spin-outs and physics in the support of multidisciplinary research as founding-chairman of leading fluorescence instrumentation manufacturer HORIBA Jobin Yvon IBH, one of the earliest spin-out companies in Scotland.

Professor Valerie Gibson OBE CPhys Hon.FInstP

Trinity College, University of Cambridge

For outstanding contributions to particle physics, women in science and public engagement.

Professor Averil Macdonald OBE Hon.FInstP

University of Southampton

For being an outstanding ambassador for physics, physicists and IOP across skills, science and society and for sustained and important contributions to improving the diversity of the STEM workforce.

Professor Qikun Xue Hon.FInstP

Southern University of Science and Technology

For groundbreaking contribution to topological insulators, exceptional contribution in condensed matter education, and invaluable support of the IOP Group in China.

Phillips Awards

The Phillips Award recognises members who have championed innovative ideas or contributed to activities that support the delivery of the IOP strategy.

Phillips Awards

Dr Rebecca Dewey CPhys MInstP

University of Nottingham

For contributions to equality, diversity and inclusion in Institute of Physics activities, including promoting, updating and improving the accessibility of the I am a Physicist Girlguiding Badge, and engaging with British Sign Language users.

Dr James W E Kneller MInstP

Northeastern University London

For leadership in establishing the Physics League Across Numerous Countries for Kick-ass Students (PLANCKS) and fostering international collaborations showcasing a commitment to advancing physics.

Dr David Sands CPhys FInstP

Educational Physicist

For work in higher education, particularly degree accreditation and the development of the new Institute of Physics accreditation scheme.

Isaac Newton Medal and Prize

The Isaac Newton Medal and Lecture is awarded annually for world-leading contributions to physics by an individual of any nationality. It recognises groundbreaking physicists and is the most prestigious award of the IOP.

Isaac Newton Medal and Prize

Professor Sir Richard Friend FRS FREng CPhys Hon.FInstP
University of Cambridge

For pioneering and enduring work on the fundamental electronic properties of molecular semiconductors and in their engineering development.

International Bilateral Award

Our International Bilateral Medals and Prizes are made jointly with physical societies in Germany, France, Italy and Australia. They are designed to strengthen relationships between institutions and acknowledge outstanding physicists who are pioneering research and physics applications across borders.

International Bilateral Award

Ludovic Berthier

Fernand Holweck Medal and Prize

Laboratoire Gulliver, CNRS & ESPCI PSL

For their exceptional work in the statistical physics of complex materials such as amorphous materials and molecular glasses, which gives them a high recognition at the international level.

**Congratulations to the
IOP award winners
for their outstanding
contribution to the
advancement of physics,
for the benefit for all.**

IOP Institute of Physics

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