



HONORARY FELLOWS

JUMA, Calestous

Professor of the Practice of International Development and Director of the Science, Technology and Globalisation Project, Kennedy School of Government, Harvard University

REES of Ludlow, Lord (Martin)

President of the Royal Society; Astronomer Royal; Professor of Cosmology and Astrophysics and Master of Trinity College, University of Cambridge

FELLOWS

ALFORD, Neil McNeill

Professor of Physical Electronics and Thin Film Materials, Imperial College London

ATKINSON, Helen Valerie

Professor in Metals Processing, University of Leicester

BEAUMONT, Steven Peter

Vice Principal for Research and Enterprise, University of Glasgow

BENNION, Ian

Professor and Head of Electronic Engineering and Head of Photonics Research, Aston University

BEYNON, John Howard

Dean of Engineering, Swinburne University of Technology, Australia

BROOK, Richard Anthony

Director, E-Synergy Ltd

COLLINGS, Nicholas

Professor of Applied Thermodynamics, Cambridge University
Founder and Director, Cambustion Inc, Cambridge

DOPPING-HEPENSTAL, Lambert Leif

Technical Director, BAE Systems

EAST, (David) Warren Arthur

Chief Executive Officer, ARM Holdings

FIRTH, Ian Peter Thomas

Senior Partner, Flint & Neill Partnership

GOODALL, Roger Morgan

Professor of Control Systems Engineering, Loughborough University

GUILD, Nigel Charles Forbes

Chief Naval Engineer Officer, Ministry of Defence

HERBERT, Andrew James

Managing Director, Microsoft Research Ltd Cambridge

HICKS, Michael Arthur

Chief Technologist - Materials, Rolls-Royce plc

MARSH, John Haig

Board Director and Chief Technical Officer, Intense Ltd (on secondment from University of Glasgow)

McNAUGHTON, Andrew

Chief Engineer, Network Rail

MITCHELL, Dervilla

Director, Arup

MULGREW, Bernard

SELEX S&AS/Royal Academy of Engineering Chair in Signal Processing, University of Edinburgh

PAGE, Trevor

Cookson Group Chair of Engineering Materials and Pro-Vice-Chancellor (External Affairs and Research), University of Newcastle-upon-Tyne; Director of the NE joint Centre for Process Innovation (CPI) and the Centre of Excellence in Nanotechnology, Microsystems and Photonics (CENAMPS)

PELLEGRINO, Sergio

Professor of Structural Engineering and Fellow of Corpus Christ College, University of Cambridge

PURSHOUSE, Michael

Head of Systems Engineering, Thales Naval UK

SCRIVENER, Colin Terence John

Formerly Chief Audit Engineer Aerospace Engineering, Rolls-Royce Engineering Fellow Aerothermal Technology, Rolls-Royce plc

STEPHENSON, David John

Professor of Materials Processing and Head of Department of Materials Processing, Cranfield University

THOMAS, Martyn Charles

Director, Martyn Thomas Associates Ltd
Visiting Professor: University of Oxford, University of Bristol and University of Wales

VARDY, Alan Edward

Part Time Research Professor of Civil Engineering, University of Dundee; Consultant, Dundee Tunnel Research

VINTER, Richard Bertrand

Head, Control and Power Research Group, Imperial College London

WABOSO, David

Director of Engineering, London Underground

WATTON, John

Professor of Fluid Power, Cardiff University

YORK, David W

Research Fellow, Proctor & Gamble Newcastle Technical Centre; Visiting Professor, Leeds University Institute of Particle Science Engineering

YOUNGER, Paul Lawrence

HSBC Professor of Energy and Environment, University of Newcastle-Upon-Tyne

INTERNATIONAL FELLOW

KASAGI, Nobuhide

Professor of Mechanical Engineering, University of Tokyo

HONORARY FELLOWS

Calestous Juma FRS

Calestous Juma is Professor of the Practice of International Development and Director of the Science, Technology and Globalisation Project at Harvard University's Kennedy School of Government. Prior to this, Professor Juma was Executive Secretary of the United Nations Convention on Biological Diversity and Founding Director of the African

Centre for Technology Studies in Nairobi, Africa's first independent policy research institution designed to advance research on technology in development. He has also served as Chancellor of the University of Guyana. He holds a PhD in science and technology policy studies from the University of Sussex and has written widely on science, technology, and the environment.

Professor Juma is a world-renowned authority in the application of science and technology to sustainable development. Through his work at the UN, he helped to ensure that science, technology and engineering were considered in the development of the Millennium Development Goals. He was also the lead author of *Innovation: Applying Knowledge in Development*, the report of the Task Force on Science, Technology and Innovation of the UN Millennium Project, which has become a standard reference against which governments assess their policies on technological innovation for development.

Professor Juma is routinely consulted by international organisations and governments, including the UK and US administrations, and his outstanding contributions to science, engineering and technology in development have been recognised by both international awards and Fellowships of the Royal Society, US National Academy of Sciences and the Academy of Sciences for the Developing World. In 2006 he delivered the Academy's Hinton Lecture, *Redesigning African Economies: the Role of Engineering in International Development*, to wide acclaim.

Lord Rees of Ludlow Kt PRS

Martin Rees is President of the Royal Society, Master of Trinity College and Professor of Cosmology and Astrophysics at the University of Cambridge. He was appointed Astronomer Royal in 1995. He is also a Visiting Professor at Leicester University and Imperial College London. He studied at Cambridge University and then held post-doctoral positions at Cambridge, California and Princeton before becoming a Professor at Sussex University. In 1973, he became a

fellow of Kings' College and Plumian Professor of Astronomy and Experimental Philosophy at Cambridge, a post he held for eighteen years. For ten years he was director of Cambridge's Institute of Astronomy.

He has been a Visiting Professor of Harvard, Caltech, Berkeley, Kyoto and the Institute of Advanced Studies at Princeton where he is a trustee. He is also a member of a number of foreign Academies.

Lord Rees' current research deals with cosmology and astrophysics, especially gamma ray bursts, galactic nuclei, black hole formation and radiative processes (including gravitational waves) and also cosmic structure formation, including the early generation of stars and galaxies. He has authored or co-authored about five hundred research papers. He has lectured, broadcast and written widely on science and policy, and is the author of seven books for a general readership. His recent awards include the Royal Society's Michael Faraday Prize and lecture for science communication (2004), and the Royal Swedish Academy's Crafoord Prize (2005). Other notable awards include the Heinemann Prize (1984), the Balzan Prize (1989), the Bower Award of the Franklin Institute (1998), the Einstein Award from the World Cultural Council (2003) and the UNESCO Neils Bohr Medal (2005).

Lord Rees has played a key leadership role in ensuring that science and engineering are brought to bear on the critical problems of climate change and our ever growing demand for energy. His communication skills and uniquely strong reputation as a reliable source of advice on science matters have been especially valuable in advancing the public's understanding of these critical matters that threaten our future.

Lord Rees is a strong supporter of Engineering and has often spoken in public about the importance of a strong and healthy engineering base to the UK economy.

FELLOWS

Neil McNeill Alford BSc PhD FIMMM FInstP FIET CEng CPhys (57)

Distinguished for his outstanding development of new inorganic materials including high-strength ceramics, superconducting materials and microwave dielectric ceramics. His discoveries were 'world firsts', published in *Nature* and patented. These developments have been used to form companies or have been transferred to industry.

Helen Valerie Atkinson BA MA DIC FIMMM CEng (47)

Recognised for her major contributions to the science and technology of the manufacture of metallic materials. She has led large-scale partnerships aimed at improving the assessment of steel cleanliness and at developing semi-solid processing (thixoforming) of aluminium and copper alloys. In collaboration with industry, she has advanced the practical application of thixoforming, producing demonstrator components for the automobile and aerospace industries, modelling die fill and designing high performance alloys specifically for the process.

Steven Peter Beaumont MA(Cantab) PhD(Cantab) MIET CEng (55)

Established world class research in nano-scale electronics and ultra fast systems at Glasgow University and made many outstanding personal contributions. He is also highly regarded for successfully transferring research to industry and founding high technology companies. Particularly distinguished for his contribution and leadership within the ALBA Project in support of the Scottish electronics industry.

Ian Bennion BSc FIET FInstP MIEEE CEng (57)

Distinguished internationally for developing photonic components and systems in both the academic and industrial sectors, and for promoting and achieving their exploitation in industry across sectors. He developed periodic structures in guided-wave optics and developed applications for them. Outstanding for creating the 50-member Photonics Research Group at Aston University.

John Howard Beynon BMet PhD FIMMM FIEAust CEng (55)

Distinguished for industrially relevant research at the interface of metallurgy and mechanical engineering/applied mechanics. He has made major contributions to basic understanding and to the development of computer models for rail wear and for thermomechanical processing of metals. His concepts and methodology have been internationally recognised, and have been adopted by the relevant industries for rail maintenance and for design and optimisation of thermomechanical processes, particularly hot rolling.

Richard Anthony Brook BSc MSc FIET CEng FInstMC MIMA CMath (62)

Outstanding achievement in business and technology development. He was Chief Executive and then President of SIRA Ltd, and is President of the Association of Independent Research and Technology

Organisations (AIRTO). His engineering management career has encompassed optical and signal processing for industrial applications as well as the UK Space community. He is influential in many aspects of business development as well as national policy development.

Nicholas Collings BSc PhD FIMechE FSAE CEng (58)

Distinguished for his research on engine combustion, mixture preparation, and emissions formation and control. Eminent for his invention and development of fast-response emissions diagnostics, and his development of novel approaches to engine and catalyst control, which have had major impacts on our understanding of engine behaviour and on engine technology.

Lambert Leif Dopping-Hepenstal BSc FIET FRAeS CEng (57)

Outstanding contributor to the development of partnerships between industry and academia in the aerospace and defence sector. An eminent systems engineer, he has made a decisive contribution to some of the UK's most successful aerospace programmes, such as shaping the Hawk to become the world's most widely used fast-jet trainer. Throughout his career and in his current role in particular, Lambert has forged exemplary UK partnerships in technology between industry, academia and government.

(David) Warren Arthur East BA MA(Oxon) MBA FIET CEng CCIM (45)

Outstanding for establishing the ARM architecture in the market as the global standard embedded microprocessor. He is passionate about transforming microelectronics technology into useful economic products for the general public. He is leading ARM to become an even stronger semiconductor IP company through strategic development, acquisition and global expansion.

Ian Peter Thomas Firth BSc MSc DIC CEng FRCE FICE FCONSE (51)

As a Partner since 1991 (currently Senior Partner) he has shared responsibility for all technical decisions and for maintaining the highest standards of excellence within Flint & Neill Partnership. He has made outstanding contributions to the design of bridges world-wide involving innovations with associated research and development, many of which have received awards. He is Vice-Chairman of the British Group of the International Association for Bridge & Structural Engineering.

Roger Morgan Goodall BA(Cantab) MA(Cantab) PhD FIET FIMechE CEng (61)

Outstanding worldwide reputation related to practical applications of advanced control. He is a leading international authority on active suspensions for railway vehicles and has made major contributions to tilting trains and magnetically levitated vehicles.

Nigel Charles Forbes Guild CB, BA(Cantab) PhD DEng FIET FIMarEST MIMA (58)

Outstanding Naval engineer in Defence Procurement. He has helped revolutionise MoD procurement philosophies, set up complex shipbuilding strategies and is overseeing the development of the Navy's carrier programme. A distinguished Chief Naval Engineer Officer who is making a marked contribution to engineering standards and personnel development in the Royal Navy.

Andrew James Herbert BSc PhD(Cantab) MBA FBCS MIEEE MACM (53)

Distinguished for his engineering leadership as Director of the Microsoft Research Laboratory in Cambridge and for important contributions to the development of internet and wireless technology.

Michael Arthur Hicks BSc PhD FIMMM FRAeS SenMWeldI CEng (53)

Internationally recognised for research contributions in microstructure/mechanical property relationships in aero engine alloys and for leading the development and service implementation of new materials and technologies critical to the performance and competitiveness of current Rolls-Royce products.

John Haig Marsh BA(Cantab) MEng PhD FIET FIEEE FRSE FlinstP FRSA CEng (51)

Distinguished for his invention of manufacturable quantum well intermixing processes for semiconductor optoelectronic devices and for achieving their commercial exploitation in novel laser array products for the printing and digital photography industries, through his founding of Intense Ltd.

Andrew McNaughton BSc FICE FPWI CEng (50)

Distinguished for recreating railway engineering leadership within Railtrack (now Network Rail) in the aftermath of the Hatfield derailment. He developed the engineering strategy for the whole of the rail network for infrastructure inspection, information management, decision tools, specifications and detailed work instructions, engineer and artisan training and development. Key achievements to date are the introduction of the new measurement of train and service train

based track measurement equipment, acknowledged as world leaders.

Dervilla Mitchell BE MIEI MICE MIStructE CEng (48)

Her outstanding achievement has been to lead a multi-disciplinary team as Head of Design Management for the superstructure of the Terminal 5 development at Heathrow. This included responsibility for the design of one of the world's longest single span roofs (150 metres) for the main passenger terminal building.

Bernard Mulgrew BSc PhD FIET FRSE CEng MIEEE (48)

Eminent in signal processing and its application to communications and radar systems. His development of adaptive nonlinear networks and their use in communications channel equalization is internationally recognized, as is his work on array processing techniques for mobile radio communications, supported by Nortel and Lucent Bell. His recent work on blind source separation in multiplicative noise is a world first, with potential application in hyper spectral imaging.

Trevor Page BA(Cantab) MA(Cantab) PhD(Cantab) FIMMM FlinstP CEng (61)

Distinguished for developing engineering ceramics and ceramic coatings, in particular for introducing and developing imaging and nanoindentation techniques to examine microstructure-property relationships in ceramics, enabling the development of useful engineering applications

Sergio Pellegrino PhD (Cantab) MIStructE MASCE CEng (48)

Distinguished for his work on innovative aspects of practical structural engineering. He has elucidated the behaviour of structural assemblies that are both statically and kinematically indeterminate. He has pioneered the rational design of deployable mast and antenna structures and made remarkable progress in using bi-stable elements in deployable lightweight space structures. He is the European Space Agency consultant for large deployable reflectors.

Michael Purshouse MA(Cantab)
PhD(Cantab) CEng FIMechE FIET VDI MIO
RUSI (55)

Distinguished for his contributions to the understanding and control of submarine noise and the development of baseline design criteria for 'silent' operation, especially noise generated electromagnetically, and for his outstanding contributions to naval marine engineering. He has demonstrated his technical leadership in many programmes for the Royal Navy.

Colin Terence John Scrivener BSc MSc
FIMechE CEng (63)

Internationally recognised for his outstanding contributions to Rolls-Royce's turbine technology that have resulted in highly competitive and innovative turbine designs. He has made significant contributions to many Rolls-Royce projects and the professional development of world-class aero thermal engineers.

David John Stephenson BSc PhD CEng
FIMechE FIMMM (54)

An outstanding materials and materials-processing engineer who continues to pioneer R&D outputs in high performance, high precision manufacturing engineering, with substantial economic benefits to UK and EU industry, both personally and through his leadership of the Innovative Manufacturing Research Centre team.

Martyn Charles Thomas CBE BSc DSc FBCS
FIET CEng (58)

Distinguished for industrial software engineering, using computer science-based development methods and rigorous quality management. His software engineering company, Praxis, became the first independent software company to be awarded BS5750 (ISO9001) and pioneered mathematically formal development methods. Under his leadership, Praxis became a leader in dependable software for safety-related and other critical applications.

Alan Edward Vardy BSc PhD DEng FRSE
FICE FASCE EurIng FEANI CEng (58)

Distinguished for using the principles of fluid flow to solve a great diversity of practical problems both in engineering and human physiology. Outstanding international reputation as an authority in tunnel aerodynamics.

Richard Bertrand Vinter BSc(Oxon)
PhD(Cantab) ScD(Cantab) FIEE SMIEEE
CEng (58)

Distinguished for research contributions to control engineering and for leadership of university research teams in this and related fields. His pioneering work on optimal control led to the introduction of new analytic techniques with widespread practical applications.

David Waboso BSc MSc FICE FIRSE FAPM
CEng (51)

Outstanding for his successful delivery of technically and operationally complex rail projects, derived from a deep engineering understanding, decisive management and inspirational leadership.

John Watton BSc PhD DSc CEng FIMechE
(63)

Distinguished for sustained advancement in fluid power control. Contributions range from novel theoretical development, through experimental validation, to implementation of system design, condition monitoring and fault diagnosis on plant up to the largest industrial scale. Exemplary research leader who has established substantial laboratory facilities for the field.

David W York BSc PhD CEng FICHEM (55)

Distinguished internationally for design and manufacture of innovative consumer products, achieved through interdisciplinary research within Procter & Gamble and research partnerships with UK and global universities, and with professional and governmental bodies.

Paul Lawrence Younger BSc MSc PhD(Eng)
FICHEM FIMMM FCIWEM FGS CGeol CSci
CEng (44)

Distinguished for highly innovative engineering solutions for communities seriously affected by water pollution arising from the abandonment of underground mines. He has developed low-cost, ecologically integrated 'passive' bioreactors which effectively treat extremely acidic mine leachates. His numerical modeling techniques for flooded underground voids and waste repositories are used extensively in the mining and nuclear sectors.

INTERNATIONAL FELLOW

Nobuhide Kasagi BS MS(Eng) Dr Eng MISCJ
FASME FJSME FJSFM MRSAS SMAIAA (60)

Distinguished for his innovative research contributions to engineering science and technology, covering a broad range of fundamental topics and applications. Also for his outstanding leadership within Japan's mechanical engineering community - notably as President Elect of the Japan Society of Mechanical Engineers and leader of Japan's premier 21st century Centre-of-Excellence Programme of Mechanical Systems Innovation. He is recognised for his dedication to building bridges between Japan's engineering profession and the international community.