

Annual **Review** Annex 2018/19



ROYAL
ACADEMY OF
ENGINEERING

Annex to the Annual Review

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Fellows elected in 2018

Fellows of the Academy are leading engineers in the UK drawn from academia, industry and the not-for-profit sectors. Fellowship is a national honour, awarded for outstanding personal engineering achievements. Election to the Fellowship is managed by current Fellows of the Academy.

INTERNATIONAL FELLOWS

Elected in 2018 were:

Professor Frances Arnold

Linus Pauling Professor of Chemical Engineering, Bioengineering and Biochemistry, California Institute of Technology

Professor Zhenya Liu

Chairman, GEIDCO, Beijing

Dr Harry Shum

Executive Vice-President - AI and Research, Microsoft Corporation

Professor Ji Zhou

Honorary Chairman, Governing Board of Chinese Academy of Engineering

HONORARY FELLOWS

Elected in 2018 was:

Philip Greenish CBE

Chair of Council, University of Southampton

FELLOWS

Elected in 2018 were:

Professor Guglielmo Aglietti

Director, Surrey Space Centre, University of Surrey

Dr Paul Atherton

Chairman, Nexxon Ltd; Phase Focus Ltd; FungiAlert Ltd

Professor Christopher Atkin

Professor of Aeronautical Engineering, City, University of London

Fawaz Bitar

Head of Global Operations, BP plc

Mark Bennett

Strategy Director - Government, BAE Systems Applied Intelligence

Sir George Buckley

Chairman, Stanley Black & Decker Inc; Smiths Group plc

Dr Mark Buswell

Vice-President and Head of Discovery, GSK

Mark Carne CBE

Former Chief Executive, Network Rail

Professor Judith Driscoll

Professor of Materials Science, University of Cambridge

Professor Hugh Durrant-Whyte FRS

Chief Scientist and Engineer, New South Wales government

Professor Robert Dwyer-Joyce

Professor of Lubrication Engineering, University of Sheffield

Trevor Gill

Telecommunications consultant

Air Marshal Susan Gray CB OBE

Air Officer Commanding No. 38 Group, Royal Air Force

Professor Timothy Green

Director of the Energy Futures Lab, Imperial College London

Professor Yike Guo

Director of Data Science Institute and Professor of Computing Science, Imperial College London and Shanghai University

Professor Christopher Hewitt*

Pro-Vice-Chancellor, Executive Dean and Professor of Biological Engineering, Aston University

Dr Graham Hoare OBE

Director - Global Engineering Operations, Ford Motor Company UK

Professor David Johnson

Director, DGauge Ltd

Professor David Jones

Pro-Vice Chancellor Education and Students, Queen's University Belfast

Dr Raouf Kattan

Managing Director, Safinah Ltd

* Professor Hewitt died in July 2019

Dr Niel Kempson CB

Director General for Capability,
UK government

Professor Robin Langley

Professor of Mechanical Engineering
and Head of Division of Mechanics,
Materials and Design, University of
Cambridge

Professor Barry Lennox

Research Director Dalton Cumbrian
Facility and Professor of Applied
Control, University of Manchester

Professor Andrew Lewis

Director of Research and Development,
Innovation, Biocompatibles UK Ltd

Peter Lomas

Director of Engineering,
Norcott Technologies Ltd

Professor Kwai Man Luk

Chair Professor of Electronic
Engineering, City University of
Hong Kong

Professor Rebecca Lunn MBE FRSE

Professor of Civil Engineering,
University of Strathclyde

John MacArthur

Vice-President Group Carbon, Shell

Professor Ricardo Martinez-Botas

Professor of Turbomachinery,
Imperial College London

Paul McKinlay

Senior Vice-President and Head of
Broughton Plant, Airbus UK

Hilary Mercer

Vice-President Pennsylvania Chemicals,
Shell Global

Professor Andrew Neely

Pro-Vice-Chancellor for Enterprise
and Business Relations, University of
Cambridge

James O'Callaghan

Founding Director,
Eckersley O'Callaghan

Brian Palmer

Chief Executive Officer,
Tharsus Group Limited

Professor Thomas Rodden

Deputy CEO, Engineering and Physical
Sciences Research Council (EPSRC);
Professor of Computing, University of
Nottingham

Nicholas Rogers

Executive Director, Product
Engineering, Jaguar Land Rover

Rob Spurrett

Founder and Director, Cherry Space Ltd

Alasdair Stirling CBE

Director Engineering Services, Naval
Marine, Babcock International Group

Dr Peter Thompson

Chief Executive Officer,
National Physical Laboratory

Professor Rachel Thomson

Professor of Materials Engineering
and Pro-Vice-Chancellor for Teaching,
Loughborough University

Professor Marco Viceconti

Professor of Biomechanics,
University of Sheffield

Professor Jiangzhou Wang

Professor and Chair of
Telecommunications, University of Kent

Dr Andrew Ward

Chief Technology Officer,
Ubisense Limited

Professor Rachel Williams

Professor of Ophthalmic
Bioengineering, University of Liverpool

Professor Graham Wren OBE

Director of Major Projects and Special
Adviser to the Principal, University of
Strathclyde

David Wright

Director, Electricity Transmission,
National Grid

Dr Richard Yemm

Director, Quocean Ltd

Professor Paul Young

Professor of Geophysics,
University of Toronto

Professor Ken Young

Technology Director,
Manufacturing Technology Centre

Professor Zhibing Zhang

Professor of Chemical Engineering,
University of Birmingham

Trustee Board

The Trustee Board comprises 12 Trustees elected by and from the Fellowship and is chaired by the President, Professor Dame Ann Dowling OM DBE FREng FRS.

OFFICERS AND MEMBERS OF COUNCIL

President

Professor Dame Ann Dowling OM DBE FREng FRS

Vice-Presidents

Naomi Climer CBE FREng, Vice-President for Fellowship Engagement

Professor Iain Gray CBE FREng FRSE, Vice-President for Committee Coordination

Members

Professor Colin Bailey FREng

Dr Martin Grant FREng

Dame Judith Hackitt DBE FREng

Dr David Hughes FREng

Professor Peter Goodhew CBE FREng

Dr Bob Joyce FREng

Professor Geoffrey Maitland CBE FREng

Professor Liz Tanner OBE FREng FRSE

Professor Stephen Williamson FREng

Professor Stephen Young FREng

Chief Executive

Dr Hayaatun Sillem

Secretariat

Sylvia Hamparturnian

Academy Governance Committees

AUDIT AND RISK COMMITTEE

The purpose of the Audit and Risk Committee is to assess and improve risk management and internal processes and controls across the Academy and oversee the external audit on behalf of the Trustee Board.

Chair

Professor Geoffrey Maitland
CBE FREng

Members

Ginny Clarke CBE FREng
Professor Iain Gray CBE FREng FRSE
Andrew McNaughton FREng
Professor Jim Norton FREng
Richard Sadler FREng
Catriona Schmolke FREng

Committee secretariat

Burnham Quail

FINANCE COMMITTEE

The Finance Committee is responsible for and accountable to the Trustee Board for the financial management of the Academy including compliance with the Charities Act 2011 and other relevant legislation, management of Academy budgets, external investment fund managers and compliance with external financial reporting standards.

Chair

Professor Stephen Young FREng

Members

Naomi Climer CBE FREng
Graeme Hobbs FREng
Dr David Hughes FREng

Committee secretariat

Burnham Quail

MEMBERSHIP COMMITTEE

The Membership Committee is the guardian of excellence in determining which candidates may go forward for election to the Fellowship. The Membership Committee consists of a Chair, Chairs of each of the Membership Selection Panels, and the Chair of the International Committee. Each of the 11 membership selection panels looks after a sector of engineering.

Chair

Dr Martin Grant FREng

Ex Officio

The President

Panel Chairs

Panel 1
Dr Steve Denton FREng

Panel 2
Professor Eileen Harkin-Jones OBE
FREng

Panel 3
Professor Nilay Shah FREng

Panel 4
Dr Roger Digby FREng

Panel 5
Professor Paul Shayler FREng

Panel 6
Lianne Deeming FREng

Panel 7
Professor Bashir Al-Hashimi CBE
FREng

Panel 8
Ed Daniels FREng

Panel 9
Dr Donal Cronin FREng

Panel 10
Dr Andrew Fitzgibbon FREng

Panel 11
Professor Gordon Masterton DL OBE
FREng FRSE

PANEL MEMBERS

Panel 1 – Civil and environmental

Professor Muhammed Basheer FREng
Dr Keith Bowers FREng
Professor David Butler FREng
Tim Chapman FREng
Professor René de Borst FREng
Chris Dulake FREng
Professor Ahmed Elghazouli FREng
Steve Harridge FREng
Dr Barbara Lane FREng
Professor Simon Pollard FREng
Mark Raiss FREng
Professor Karen Scrivener FREng
Dr Sarah Williamson FREng

Panel 2 – Materials and mining

Dr Tony Batchelor FREng
Professor Andrew Bell FREng
Mark Cutifani FREng
Professor Sarah Hainsworth OBE FREng
Dr Chris Haynes OBE FREng
Professor Robert Pine FREng
Professor Mark Rainforth FREng
Professor Roger Reed FREng
Professor Mary Ryan FREng
Catriona Schmolke FREng
Professor Robert Wood FREng

Panel 3 – Chemicals and process

Professor Peter Fryer FREng
Professor Mojtaba Ghadiri FREng
Professor Gary Lye FREng
Professor Ian Metcalfe FREng
Andrew Sinclair FREng
Professor Hugh Stitt FREng
Patrick Thomas FREng
Philip Tracy FREng

Panel 4 – Aerospace

Professor Richard Brook OBE FREng
Professor Esteban Busso FREng
Gavin Campbell FREng
Alan Newby FREng
Dr Ian Ritchey FREng
Professor Michael Wisnom FREng

Panel 5 – Transport and mechanical

Professor Andrew Doherty FREng
Professor Colin Garner FREng
Tony Harper FREng
Professor Karen Holford CBE FREng FLSW
Professor David Hutchins FREng
Professor Neville Jackson FREng
Professor Bill Jones FREng
Muir Macdonald FREng
Professor Roderick Muttram FREng
Professor Roderick Smith FREng
Richard Vie FREng

Panel 6 – Manufacturing and design

Richard Barber FREng
Richard Goodwin FREng
Dr Clive Hickman FREng
Professor Sri Hinduja FREng
Rachel Hurst FREng
Professor Ian Hutchings FREng
Professor Joseph McGeough FREng FRSE

Panel 7 – Electrical and electronic

Professor David Cardwell FREng
Dr Andy Carter FREng
Professor David Cumming FREng FRSE
Professor Giles Davies FREng
Professor Graeme Malcolm OBE FREng FRSE
Dr Pavel Matousek FREng
Professor Barrie Mecrow FREng
Dr Ed Morton FREng
Professor Bucur Novac FREng
Dr David Parker FREng
Professor Robert Parkin FREng
Rakesh Sharma OBE FREng
Dr Andrew Shields FREng
Professor Sarah Spurgeon OBE FREng
Professor Zi-Qiang Zhu FREng

Panel 8 – Energy and power

Professor Julian Allwood FREng
Jane Atkinson FREng
Andrew Carlick FREng
Professor Richard Clegg FREng
Dr Andrew Garrad CBE FREng

Dr Rick Jefferys FREng
Professor Rod Rainey FREng
Professor Ian Smith FREng
Professor Anton Ziolkowski FREng FRSE

Panel 9 – Medical and bioengineering

Professor Anthony Bull FREng
Professor Rod Smallwood FREng
Professor Christopher Taylor OBE FREng
Professor Mark Tooley FREng
Mike Tuke FREng
Professor David Williams OBE FREng
Professor Sir Saeed Zahedi OBE RDI FREng

Panel 10 – Computing and communications

Professor Robin Bloomfield FREng
Professor Darwin Caldwell FREng
Professor Sheng Chen FREng
Professor Tony Cohn FREng
Professor Mike Davies FREng
Professor Mischa Dohler FREng
Professor Ursula Martin CBE FREng FRSE
Professor James Norton FREng
Dr Phil O'Donovan FREng
Professor Peter O'Hearn FREng FRS
Professor Stephen Roberts FREng
Professor Daniel Rueckert FREng
Professor Mark Sandler FREng
Professor Anne Trefethen FREng
Dr Eben Upton CBE FREng
Professor Paul Watson FREng

Panel 11 – Special

Dr Alan Begg FREng
Professor Muffy Calder OBE FREng FRSE
Graham Dalton FREng
Professor Graham Davies FREng
Steven Dearden FREng
Jonathan Lyle CB FREng
Dr Paul Miller FREng
Professor Sir Timothy O'Shea FREng FRSE
Professor Terry Wilkins FREng

NOMINATIONS COMMITTEE

The purpose of the Nominations Committee is to ensure that a sufficient number of Fellows stand as candidates in the annual Trustee election and that the candidates bring to the Trustee Board skills, knowledge, experience and diversity that would yield, among the ordinary members and vice-presidents, a balanced Board. The Committee will recommend to the Board candidates for appointment as vice-presidents and candidates for appointment as chairs of the Academy's committees. The Committee is also to recommend to the Trustees, and ultimately the Fellowship, the Academy's President from nominations submitted by the Fellowship.

Chair

**Professor Dame Ann Dowling OM
DBE FREng FRS**

Members

**Dr Alan Begg FREng
Naomi Climer CBE FREng
Dr Andrew Harter CBE FREng
Professor Asoke Nandi FREng
Dr Dame Frances Saunders DBE CB
FREng
Dr Liane Smith FREng
Professor Sir Christopher Snowden
FREng FRS**

Committee secretariat

Dr Hayaatun Sillem

REMUNERATION COMMITTEE

The purpose of the Remuneration Committee is to establish and keep under review the remuneration policy for permanent Academy staff, which will be implemented by the Chief Executive; to consider the recommendation of the Chief Executive for remuneration of the Academy Directors and agree their remuneration; and to set the remuneration of the Chief Executive.

Chair

**Professor Dame Ann Dowling OM
DBE FREng FRS
Naomi Climer CBE FREng
Professor Iain Gray CBE FREng FRSE
Professor Stephen Young FREng**

Committee secretariat

Dr Hayaatun Sillem

Academy Operating Committees

AWARDS COMMITTEE

The role of the Awards Committee is to identify and recommend to the President and Trustee Board appropriate candidates for all of the Academy's relevant prizes and awards (with the exception of National Honours, the International Medal, the Queen Elizabeth Prize for Engineering and the MacRobert Award).

Chair

Professor Raffaella Ocone OBE FREng FRSE

Members

Dr Alan Belfield FREng
Professor Alistair Borthwick FREng FRSE
Professor Anthony Bull FREng
Professor Trish Connolly FREng FRSE
Professor Mojtaba Ghadiri FREng
Tony Graham FREng
Alan Newby FREng
Professor Graham Reed FREng
Dr Richard Taylor FREng
Dr John Tubman FREng

Committee secretariat

Sylvia Hamparturnian

DIVERSITY AND INCLUSION COMMITTEE

The purpose of this Committee is to advise and have oversight of the all Diversity and Inclusion Programme strands of work including that with employers, professional engineering institutions and within the Academy itself.

The Committee Chair will present an annual report to the Academy's Trustee Board summarising internal and external activities and recommendations for action.

Chair

Dervilla Mitchell CBE FREng

Members

Professor Sarah Hainsworth OBE FREng
Steven Dearden FREng
Professor Dame Pratibha Gai DBE FREng FRS
Carolyn Griffiths FREng
Jonathan Lyle CB FREng
Professor Nilay Shah FREng
David Waboso CBE FREng
Air Marshal Julian Young CB OBE FREng
Ian Ritchey FREng
Professor Paul Watson FREng
Dr Sarah Williamson FREng

Members (non-Fellow)

Paul Bailey - Deputy CEO, Engineering Council
Rosemary Cook CBE - CEO, IPPEM
Elspeth Finch MBE - Enterprise Hub mentor
Dr Nike Folayan - Chair, Association for Black Engineers
Dr Mark McBride-Wright - Chair and Founder, InterEngineering

Committee secretariat

Bola Fatimilehin

EDUCATION AND SKILLS COMMITTEE

The Education and Skills Committee's role is to oversee and be responsible for the Academy's activities in engineering education and training, and to maintain links with other bodies working in these fields.

Chair

Professor Jonathan Seville FREng

Members

Professor Claire Adjiman FREng
Nick Cooper FREng
Dr Graham Farnell CB OBE FREng
Professor Eileen Harkin-Jones OBE FREng
Professor Tim Ibell FREng
Bernard Looney FREng
Muir Macdonald FREng
Colin Matthews CBE FREng
Professor Richard Prager FREng
Professor Tony Ridley CBE FREng
Professor Mary Ryan FREng
Professor Rachel Thomson FREng

Ex-officio

Howard Mathers CBE FREng
David Scott FREng FRSE
Dr Stephen Huntington (Chair, Panasonic Trust)
Chris Earnshaw OBE FREng (Chair, SMF)

Observers

Professor Sarah Spurgeon OBE FREng
Katy Turff

Committee secretariat

Dr Rhys Morgan

ENGINEERING POLICY CENTRE COMMITTEE

The Engineering Policy Centre Committee's role is to advise and be responsible to the Trustee Board for the National Engineering Policy Centre, providing oversight of the Centre's aims, priorities and high-level programme of work. It should identify, monitor and promote attention to emerging and generic issues of importance to engineering in pursuit of this role.

Chair

Professor Jeremy Watson CBE FREng

Members

Gavin Campbell FREng

Tim Chapman FREng

Mandy Chessell CBE FREng

Dr Steve Denton FREng

**Professor John Fisher CBE FREng
FMedSci**

Professor Paul Howarth FREng

Professor Nick Jennings CB FREng

Nigel Perry MBE FREng

Catriona Schmolke

Professor Nilay Shah FREng

Paul Taylor FREng

Professor Mark Tooley FREng

Steve Yianni FREng

Ex Officio

**Professor David Delpy CBE FREng
FRS FMedSci**

Committee secretariat

Dr Philippa Westbury

ENTERPRISE COMMITTEE

The role of the Enterprise Committee is to provide strategic oversight and leadership of the Academy's Enterprise Hub, on behalf of the Trustee Board. The Committee oversees the development and operation of the Enterprise Hub, and supports and promotes its activities, which includes developing appropriate partnerships and funding relationships. It ensures the quality and rigour of the assessment process and selection of awards for the Academy's UK-based enterprise schemes.

Chair

Ian Shott CBE FREng

Members

Professor Norman Apsley OBE FREng

**Professor Steven Beaumont OBE
FREng FRSE**

Professor Richard Brook OBE FREng

Mike Carr OBE FREng

Anne Glover CBE HonFREng

Professor Iain Gray CBE FREng FRSE

Dr Andy Harter CBE FREng

Dr Hermann Hauser KBE FREng FRS

**Professor Andrew Hopper CBE
FREng FRS**

Professor Alison Noble OBE FREng

Sir John O'Reilly FREng FLSW

Dr Robert Sansom FREng

Dr Dick Whittington FREng

Professor Eric Yeatman FREng

Member (non-Fellow)

Dr Ruth McKernan CBE

Committee secretariat

Ana Avaliani

EXTERNAL AFFAIRS COMMITTEE

The role of the Committee is to provide strategic direction for external affairs activities on behalf of the Trustee Board. It oversees all aspects of the Academy's communications, public affairs and engagement activities and events programme, ensuring they are delivered in line with Royal Charter and business plan commitments.

Chair

**Professor Mark Miodownik MBE
FREng**

Members (Fellows)

Professor Tony Cohn FREng

Professor Mischa Dohler FREng

**Professor Dame Pratibha Gai DBE
FREng FRS**

Professor David Howard FREng

**Professor Geoffrey Maitland CBE
FREng**

**Professor Anthony Finkelstein CBE
FREng**

**Professor Sir Saeed Zahedi OBE RDI
FREng**

Ex-officio Members

**Dr Scott Steedman CBE FREng (Chair
of *Ingenia*)**

Members (non-Fellows)

Clive Cookson

John Gardner

Dr Roger Highfield

Kelly Oakes

Committee secretariat

Jane Sutton

INTERNATIONAL COMMITTEE

The role of International Committee is to advise and be responsible to the Trustee Board for promoting the international interests of the Academy. In pursuit of this role, the Committee's interests include the Academy's membership of the International Council of Academies of Engineering and Technological Sciences (CAETS) and the European Council of Applied Sciences and Engineering (Euro-CASE).

The Committee also contributes to other international committees and study groups as appropriate, and works to expand relationships with other academies of engineering and technological sciences, taking part in their activities where this is consistent with the Academy's objectives.

The Committee oversees and the Academy's Global Challenges Research Fund and Newton Fund activities.

Chair

David Thomlinson FREng

Members

Professor David Bogle FREng
Malcolm Brinded CBE FREng
Dr Jane Buglear FREng
Professor Tariq Durrani FREng FRSE
David Eyton CBE FREng
Dr Allyson Lawless FREng
Dr John Lazar CBE FREng
Professor Ric Parker CBE FREng
Professor John Perkins CBE FREng
Professor William Powrie FREng
Professor Florin Udrea FREng
Dr Jean Venables CBE FREng
Professor Hai-Sui Yu FREng

Member (non-Fellow)

Professor Barbara Evans

Committee secretariat

Shane McHugh

RESEARCH COMMITTEE

The purpose of the Research Committee is, on behalf of the Trustee Board, to provide strategic oversight and leadership of the Academy's UK-based research programmes and research policy activity.

Chair

Professor Sir Jim McDonald FREng FRSE

Members

Dr Jeremy Burroughes FREng FRS
Professor Alicia El Haj FREng
Professor Karen Holford CBE FREng FLSW
Professor Jeff Magee FREng
Professor Mark Sandler FREng
Professor Tom Stephenson FREng
Dr Dame Angela Strank DBE FREng FRS
Professor Hywel Thomas CBE FREng FRS FLSW
Professor Ann Trefethen FREng
Professor Robert Wood FREng
Professor Hua Zhao

Ex-officio

Dr Alan Begg FREng (Industrial Advisory Group)
Professor Stephen Williamson FREng (Research Chairs)
Professor Elaine Martin OBE FREng (Industrial Secondments)
Professor Stephen McLaughlin FREng FRSE (Leverhulme Trust)
Dr Dame Frances Saunders DBE CB FREng (CIET)

Committee secretariat

Dr Christina Guindy

Academy other committee

MACROBERT AWARD COMMITTEE

The purpose of the MacRobert Committee is to identify and choose appropriate finalists and winners of the Royal Academy of Engineering's MacRobert Award for UK innovation in engineering.

The MacRobert Award, first presented in 1969, is the UK's longest-running and most prestigious national prize for engineering innovation.

It honours the winning organisation with a gold medal, and the team members a cash prize of £50,000. The presentation of the award recognises outstanding innovation, tangible societal benefit and proven commercial success.

Chair

Dr Dame Sue Ion DBE FREng FRS

Members

Naomi Climer CBE FREng
Professor David Delpy CBE FREng FRS FMedSci
Professor Nick Jennings CB FREng
Professor Gordon Masterton DL OBE FREng FRSE
Professor Sir John McCanny CBE FREng FRS
Professor Ric Parker CBE FREng
Professor Sir Saeed Zahedi OBE RDI FREng

Member (non-Fellow)

Keith Davis (former Chairman, MacRobert Trust)

Committee secretariat

Sylvia Hamparturnian

Grants, fellowships and programmes

RESEARCH CHAIRS

The Research Chairs programme provides funding, together with industry and other research organisations, to support strategically important research in UK universities. The Academy provides funding for an initial period of five years.

Name	Co-sponsor	Subject	University
Professor Guglielmo Aglietti FREng	Surrey Satellite Technology	Space engineering	University of Surrey
Professor John Andrews	Network Rail	Infrastructure asset management	University of Nottingham
Professor Matthew Angling	Defence Science and Technology Laboratory	Space environment and radio frequency engineering	University of Birmingham
Professor Ashraf Ayoub	Pell Frischmann	Nuclear infrastructure engineering	City, University of London
Professor Robert Bowman	Seagate Technology	Advanced materials for data storage	Queen's University Belfast
Professor Christoph Breucker	BAE Systems	Aeronautical engineering	City, University of London
Professor Richard Butler	GKN Aerospace	Composites analysis	University of Bath
Professor Byron Byrne	Ørsted	Advanced geotechnical design	University of Oxford
Professor Jon Carrotte	Rolls-Royce	Aerothermal technology	Loughborough University
Professor George Constantinides	Imagination Technologies	Digital computation	Imperial College London
Professor Jonathan Cooper	Airbus	Aeronautical engineering	University of Bristol
Professor Claire Davis	Tata Steel	Low energy steel processing	University of Warwick
Professor Andrew Davison FREng	Dyson	Efficient vision for robotics	Imperial College London
Professor Yulong Ding	Highview Power	Cryogenic energy storage	University of Birmingham
Professor Hongbiao Dong	TWI Ltd	Innovative metal processing	University of Leicester
Professor Fionn Dunne FREng	Rolls-Royce	Integrative mechanistic design	Imperial College London
Professor Daniel Esser	Selex ES	Laser device physics and engineering	Heriot-Watt University
Professor Amparo Galindo	Lilly	Pharmaceutical molecular systems	Imperial College London
Professor Mark Girolami	Lloyd's Register Foundation	Data centric engineering	University of Cambridge
Professor Kenneth Grattan OBE FREng	George Daniels Trust	Next generation optical and fibre-optic instrumentation	City, University of London
Professor Matthew Hall	British Geological Survey	Carbon capture, storage and alternative hydrocarbons	University of Nottingham

Name	Co-sponsor	Subject	University
Professor Eileen Harkin-Jones OBE FREng	Bombardier	Composites engineering	Ulster University
Professor Dame Xiangqian (Jane) Jiang DBE FREng	Renishaw	Precision metrology	University of Huddersfield
Professor Roy Kalawsky	Airbus	Digital and data engineering information systems	Loughborough University
Professor Nikil Kapur	GSK	Pharmaceutical processing	University of Leeds
Professor Alan Kemp	Fraunhofer UK	Advanced laser engineering	University of Strathclyde
Professor Ian Kinloch	Morgan Advanced Materials	Carbon materials	University of Manchester
Professor Roger Lewis	Rail Safety and Standards Board	Wheel/rail interface low adhesion management	University of Sheffield
Professor Jianguo Lin FREng	Tata Steel	Multidisciplinary studies of hot stamping	Imperial College London
Professor Mikel Lujan	ARM	Low power IoT and edge computing; taming heterogenous system-on- chip	University of Manchester
Professor Rebecca Lunn MBE FREng FRSE	BAM Nuttall	Biomineral technologies for ground engineering	University of Strathclyde
Professor Omar Matar	Petronas	Multiphase fluid dynamics	Imperial College London
Professor Bruno Merk	National Nuclear Laboratory	Computational modelling for nuclear engineering	University of Liverpool
Professor Stephen Muggleton FREng	Syngenta	Applications of automated theory-formation using meta-interpretive machine learning	Imperial College London
Professor Chris Pearce	EDF Energy	Computational mechanics for nuclear power engineering	University of Glasgow
Professor Philip Prangnell	Airbus	Metallurgical excellence	University of Manchester
Professor Pedro Rivera-Diaz-del- Castillo	LPW	Alloy and microstructure design for additive layer manufacturing	Lancaster University
Professor Stephen Roberts FREng	MAN Group Plc	Machine learning at industrial and commercial scale	University of Oxford
Professor Mary Ryan FREng	Shell	Interfacial nanoscience of engineering materials	Imperial College London
Professor Vladimiro Sassone	Roke	Cyber security	University of Southampton
Professor Sven Schroeder	Infineum UK	Engineering applications of synchrontron science	University of Leeds

Name	Co-sponsor	Subject	University
Professor Thomas Scott	AWE	Actinide metallurgy	University of Bristol
Professor Tong Sun OBE	Faiveley Brecknell Willis	Smart railway electrification: evolvable from contact to contactless	City, University of London
Professor Ashutosh Tiwari	Airbus	Digitisation for zero-setup and zero-measurement manufacturing	University of Sheffield
Professor Iain Todd	GKN Aerospace	Additive manufacture and advanced structural metallics	University of Sheffield
Professor Philip Torr	Five AI	Computer vision	University of Oxford
Professor Andrew Tyas	Defence Science and Technology Laboratory	Protection engineering against high explosive blast	University of Sheffield
Professor Tom Vercauteren	Medtronic	Machine learning for computer-assisted neurosurgery	King's College London
Professor Phillip Webb	Airbus	Aero-structures design	Cranfield University
Professor Jennifer Whyte	Laing O'Rourke	Systems integration	Imperial College London
Professor Sophie Williams	DePuy Synthes	Hip replacement technology	University of Leeds
Professor Ping Xiao	Rolls-Royce	Advanced coating technology	University of Manchester
Dr Xibo Yuan	Safran Electrical & Power UK	Advanced aircraft power generation systems	University of Bristol
Professor Michalis Zervas	SPI Lasers	Advanced fibre laser technologies for future manufacturing	University of Southampton
Professor Zi-Qiang Zhu FEng	Siemens Wind Energy	High efficiency and power density wind-power generator systems	University of Sheffield

RESEARCH CHAIRS IN EMERGING TECHNOLOGIES

The Chairs in Emerging Technologies scheme provides long-term support of up to 10 years to global research visionaries to lead on developing emerging technology areas with high potential to deliver economic and social benefit to the UK.

Name	Subject	University
Professor Ana Cavalcanti	Software engineering for robotics: modelling, validation, simulation, and testing	University of York
Professor Timothy Denison	Brain engineering; towards closed-loop, non-invasive bioelectronic therapies for neurological disorders	University of Oxford
Professor Yiannis Demiris	Personal assistive robots	Imperial College London
Professor Michael Fisher	Responsible autonomous systems	University of Liverpool
Professor Brian Gerardot	Integrated two-dimensional classical and quantum photonics	Heriot-Watt University
Professor Alessio Lomuscio	Trusted learning-based autonomous and robotic systems	Imperial College London
Professor Colin McInnes MBE FREng FRSE	Emerging space technologies	University of Glasgow
Professor Anne Neville OBE FREng FRS FRSE	Bio-inspiration for functional surface design	University of Leeds
Professor Jeremy O'Brien	Photonic quantum ICT	University of Bristol
Professor Jason Reese FREng FRSE	PYRAMID: a platform for multiscale design, from molecules to machines	University of Edinburgh
Professor Susan Rosser	Engineered cells for combined diagnostics and therapeutics (theranostics)	University of Edinburgh
Professor Jonathan Rossiter	Smart materials and mechanisms for ubiquitous soft robotics	University of Bristol
Professor Paul Shearing	Emerging battery technologies for next generation energy storage	University College London
Professor Sriram Subramanian	Interactive technologies using metamaterials	University of Sussex

SENIOR RESEARCH FELLOWSHIPS

The Senior Research Fellowships programme provides funding for lecturer/reader-level appointments. Fellowships are funded jointly with industry for a period of five years.

Name	Co-sponsor	Subject	University
Dr Jacqueline Cole	BASF	Data-driven molecular engineering of functional materials	University of Cambridge
Dr Brian Connolly	EDF Energy	Corrosion performance of energy systems	University of Manchester
Dr Corin Gawith	Covesion	Nonlinear optical materials by ultra-precision machining	University of Southampton
Dr Priti Parikh	BBOX	Smart solar solutions for all (S34ALL)	University College London
Dr Radan Slavik	Lumenisity	Thermally-insensitive hollow core optical fibres	University of Southampton
Dr Cindy Smith	Scottish Water	Biofiltration by biological design	University of Glasgow
Dr Sotirios Tsiftaris	Canon Medical	Healthcare AI	University of Edinburgh

LEVERHULME TRUST SENIOR RESEARCH FELLOWSHIPS

These fellowships provide mid-career engineers working in UK academic institutions with the opportunity to focus on research activities for a period of up to a year, while giving a more junior academic the opportunity to gain valuable teaching experience.

Name	Subject	University
Dr George Adamopoulos	Solution-processed ferroelectric field effect transistors for memory applications	Lancaster University
Dr Riaz Akhtar	A novel approach to identifying risk of rare aortic diseases	University of Liverpool
Dr Ioannis Andreopoulos	Compressed-domain deep learning for video (CODEL-VIDEO)	University College London
Dr Russell Goodall	Novel strategies for designing alloyed metals (NoStraDAMUS)	University of Sheffield
Dr Helen Hastie	Intelligent interaction for autonomy (INCA)	Heriot-Watt University
Dr Mark Leake	Studying the molecule of life using molecular engineering tools	University of York
Dr Michail Matthaiou	Ultra-reliable, low latency machine-to-machine communications	Queen's University Belfast
Dr Manosh Paul	Next generation advanced gasification technology	University of Glasgow
Dr Benedict David Rogers	True multi-phase modelling of wet-natural hazards: water, debris and people	University of Manchester
Dr Aleksey Rozhin	Hybrid photonic gas sensors with functionalised carbon nanomaterials	Aston University
Dr Nima Shokri	Quantifying the effects of salt precipitation on evaporation from soil	University of Manchester
Dr Jin Sun	4D-printing using programmable soft materials: from rheology to technology	University of Edinburgh
Dr David Barrie Thomas	Self-verifying digital IP-Cores for mathematical functions	Imperial College London

DAPHNE JACKSON TRUST FELLOWSHIPS

These Fellowships enable engineers to return to work following a career break.

Name	Subject	University
Dr Xuanli Luo	Nano quasicrystals for hydrogen storage	University of Nottingham

RESEARCH FELLOWSHIPS

These fellowships are awarded to outstanding early-career researchers from all branches of engineering who have up to four years' postdoctoral experience.

Name	Subject	University
Dr Nasrin Al Nasiri	Novel coatings for ceramic gas turbines	Imperial College London
Dr Yoann Altmann	Bayesian computational methods for efficient low-energy imaging and sensing	Heriot-Watt University
Dr David Armstrong	Micro-engineering advanced alloys for extreme nuclear power environment	University of Oxford
Dr Emmanouil Benetos	A machine learning framework for audio analysis and retrieval	Queen Mary University of London
Dr Martynas Beresna	Ultrafast laser-induced nanostructuring: a pathway to advanced optical-fibre engineering	University of Southampton
Dr Ben Britton	Physical understanding of micromechanical mechanisms for structural integrity assessment in nuclear engineering	Imperial College London
Dr Siming Chen	Integrated III-V quantum dot photonic circuits on silicon platforms	University College London
Dr Mark Chiew	Characterising the brain's spatio-temporal dynamics by integrating EEG and FMRI	University of Oxford
Dr David Clifton	Machine learning for the intelligent patient record	University of Oxford
Dr Michael Cook	Automated game design: next-generation creative AI for games	Queen Mary University of London
Dr Alexander Dickinson	Developing, testing and fitting the next generation of prosthetic limbs	University of Southampton
Dr Ross James Donaldson	Practical optical ground station receivers for satellite-based quantum communication	Heriot-Watt University
Dr Trung Q. Duong	Meeting future wireless capacity via secure and energy-efficient small-cell networks	Queen's University Belfast
Dr Marco Endrizzi	Laboratory-based x-ray dark-field microscopy and microtomography	University College London
Dr Amanda Joy Foust	Holographic light shaping for reverse engineering neural circuit learning	Imperial College London
Dr Lidia Galdino	Capacity-approaching, ultra-wideband nonlinear optical fibre transmission systems	University College London
Dr Enrique Galindo-Nava	Developing novel materials for gas turbine engines: an integrated computational and modelling approach	University of Cambridge
Dr Pola Goldberg Oppenheimer	Advanced micro-optofluidic portable sensing (AMPS) technology for timely point-of-care diagnostics	University of Birmingham
Dr Ben Green	Long-distance quantum communication devices via engineered defects in diamond	University of Warwick
Dr Rainer Groh	Robust computational methods and design paradigms for spatially chaotic structures	University of Bristol
Dr Charlotte Hagen	A novel 3D, non-destructive imaging platform for tissue engineering	University College London
Dr Abderrahim Halimi	Advanced computational methods for smart and extreme imaging	Heriot-Watt University

Name	Subject	University
Dr Robert Lianqi Zhao Hoye	Designing and engineering a new generation of high-efficiency tandem photovoltaics	University of Cambridge
Dr Gregory Jasion	Hollow microstructured optical fibres for high-power laser delivery	University of Southampton
Dr Melanie Jimenez	Tackling antimicrobial resistance: engineering new microsystems for rapid bacteria purification	University of Glasgow
Dr Edward Johns	Empowering next-generation robots with dexterous manipulation; deep learning via simulation	Imperial College London
Dr Edmund Kelleher	Next-generation short-pulse lasers for the visible and ultraviolet	Imperial College London
Dr Maiwenn Kersaudy-Kerhoas	Towards better pregnancy monitoring; miniaturised tools for non-invasive prenatal diagnosis in clinics and hospitals	Heriot-Watt University
Dr Thomas Kissinger	Doppler-enhanced lidar system using range-resolved interferometry	Cranfield University
Dr Domaniç Lavery	Simplified transceiver architectures for high capacity optical networks	University College London
Dr Martin Lavery	A toolkit for high dimensional communications	University of Glasgow
Dr Fleur Loveridge	New thermal and geotechnical facility for ground heat exchangers	University of Leeds
Dr Myra Lydon	Solutions to monitor and assess resilience in transport (SMART) infrastructure	Queen's University Belfast
Dr Luca Magri	Adjoint-based approaches in thermo-acoustics: understanding, modelling and controlling instabilities	University of Cambridge
Dr Massimiliano Materazzi	Advanced thermal technologies for conversion of waste into second-generation biofuels	University College London
Dr Adnan Mehonic	Next generation adaptive electronics for neuromorphic engineering	University College London
Dr Leila Miriam Moura	Liquid engineering for gas separation	Queen's University Belfast
Dr Armin Mustafa	4D vision for perceptive machines	University of Surrey
Dr Milos Nedeljkovic	On-chip systems for mid-infrared sensing	University of Southampton
Dr Thomas Okell	A unified approach for non-invasive assessment of brain blood supply	University of Oxford
Dr Oliver Payton	Mapping, measuring and manufacturing nanostructures via high-speed atomic force microscopy	University of Bristol
Dr Fernando Perez-Cota	Phonon microscopy; a new way to see inside living cells	University of Nottingham
Dr Pavlos Petoumenos	Deep learning for easier compiler analysis and optimisation	University of Edinburgh
Dr David Phillips	Sensing and actuation of nanoscale mechanics in biological systems	University of Glasgow
Dr Soraia Pimenta	Multiscale discontinuous composites for large scale and sustainable structural applications	Imperial College London
Dr Antoniu Pop	PROMPT: productive and robust many-core programming	University of Manchester
Dr Ludovic Renson	Developing next generation testing methods for nonlinear mechanical structures	University of Bristol

Name	Subject	University
Dr Robert Richards	Development of indium gallium arsenide bismide for mid-wavelength infrared applications	University of Sheffield
Dr Brian Sheil	Intelligent real-time monitoring to inform underground construction processes	University of Oxford
Dr Joseph Sherwood	Interactions between fluid dynamics and biological function in microvascular disease	Imperial College London
Dr Mariia Sorokina	Laser brain: artificial neural network based on fibre laser system	Aston University
Dr Neil Vaughan	Virtual reality training: development of frameworks for haptic skill assessment, material modelling and adaptation	University of Chester
Dr Catarina Veiga	A framework to study radiotherapy-induced late effects on paediatric patients	University College London
Dr Yue Wang	TOAST - two-dimensional optical amplification for silicon technologies	University of York
Dr Freddie Withers	Light harvesting hybrid - graphene-based devices (GrapheX)	University of Exeter
Dr Weijia Yuan	Advancing renewable energy integration by innovative SMES-battery storage systems	University of Strathclyde
Dr Min Zhang	Fully superconducting machines for next generation electric aircraft propulsion	University of Strathclyde

ENGINEERING FOR DEVELOPMENT RESEARCH FELLOWSHIPS

These fellowships are funded by the Global Challenges Research Fund to support research designed to tackle a specific engineering development need of a country or countries on the Development Assistance Committee list.

Name	Subject	University
Dr Ralf Bauer	Miniaturised 3D-printed biomedical imaging system using optical MEMS	University of Strathclyde
Dr Maria Chernysheva	Novel mid-infrared ultrafast fibre lasers for molecular vibrational sensing technologies	Aston University
Dr Jan Andries Mol	Single-molecule electronics	Queen Mary University of London
Dr Ana Weydaluisa Namburete	Ultrasound-based atlas for longitudinal analysis of fetal brain maturation	University of Oxford
Dr Samuel Powell	Engineering a new approach to biomedical imaging using sound and light	King's College London
Dr Junjie Shen	Safe drinking water using capacitive deionization for East Africa	University of Bath
Dr Long Seng To	Enhancing community energy resilience using renewable energy in developing countries	Loughborough University

Name	Subject	University
Dr Ton van den Bremer	Cleaning the ocean: understanding transport of plastic pollution by waves	University of Oxford
Dr Thomas Vetter	Understanding impurity incorporation into organic crystals from measurements and simulations	University of Manchester

UK INTELLIGENCE COMMUNITY POSTDOCTORAL RESEARCH FELLOWSHIPS

These two-year fellowships are funded by the Government Office for Science to promote unclassified basic research in areas of interest to the intelligence, security and defence community.

Name	Subject	University
Dr Jerone Theodore Alexander Andrews	Anomaly detection for the identification of tampered face images	University College London
Dr Raoul Franky Guiazon	Artificial behaviour based authentication for the Internet of Things	University of Leeds
Dr David John Harris	Evaluating virtual reality training of cognitive skills for counter terror policing	University of Exeter
Dr John David Haynes	The nature of risk in the privacy calculus	City, University of London
Dr Timothy Helps	Insect-inspired strong and soft semi-autonomous agents for remote missions	University of Bristol
Dr James Robinson	Environmentally stable rechargeable batteries for flexible wearable electronics	University College London
Dr Jonathan Michael Silver	Quantum and optical sensors	City, University of London
Dr Fabio Alessio Vittoria	Stored energy detection in complex environments	University College London

LLOYD'S REGISTER FOUNDATION RESEARCH FELLOWSHIP

This fellowship is funded by the Lloyd's Register Foundation. It is aimed at outstanding researchers from all branches of engineering who are about to finish their PhDs or have up to four years' postdoctoral experience.

Name	Subject	University
Dr Mark Batty	CGrail: unified, optimisable and formally-specified C concurrency	University of Kent
Dr Rebecca Boston	Nanostructured oxides for sustainable energy storage and recovery	University of Sheffield

RAENG INDUSTRIAL FELLOWSHIPS SCHEME

Industrial Fellowships enable mid-career academics to undertake a collaborative research project, for up to two years, in an industrial environment. The aim is to strengthen the relationship between universities and industry by providing engineering academic staff with exposure to industrial and commercial practice.

Name	University	Industrial partner	Project title
Dr Federico Alberini	University of Birmingham	Johnson Matthey	Use of advanced diagnostic data for complex fluid process scale-up
Dr Halim Alwi	University of Exeter	Prismatic Ltd.	Flight control for high altitude long endurance UAV
Dr Madeleine J Bussemaker	University of Surrey	Arcadis UK Ltd/CE Geochem	Ultrasonic degradation of per- and poly-fluoroalkyl substances (PFAS)
Dr Matteo Ceriotti	University of Glasgow	Alba Orbital Ltd	Attitude determination and control for PocketQube picosatellites
Dr Dimitrios Gerogiorgis	University of Edinburgh	Molson Coors Brewing Company Ltd	Data analytics for high-performance multiobjective beer fermentation and filtration optimisation
Dr James Ernest Green	University of Sheffield	Controlled Power Technologies Ltd	Advanced electronic instrumentation systems for electric vehicle motors and generators
Dr Abigail Hathway	University of Sheffield	Arup	Model predictive control for low energy building operation
Dr Robert William Hewson	Imperial College London	Airbus, part of the Airbus Group	Design optimisation of 3D printed hierarchical structures
Dr Matthew Himsworth	University of Southampton	Defence Science and Technology Laboratory	Quantum sensing in dynamic environments
Dr Zafer Kazanci	Queen's University Belfast	Bombardier Aerospace	Low-velocity impact analysis of composite sandwich panels utilising auxetic cores
Dr Christie Maddock	University of Strathclyde	Orbital Access Ltd	Preliminary design of a UK small satellite launch system
Dr Alistair McIlhagger	University of Ulster	Bombardier	MODATex - multi-optimisation and development of advanced textile composites
Dr Birgit Painter	De Montfort University	Pick Everard	Integrated building performance evaluation: practical assessment of management tools
Dr Indika Dinesh Bandara Pamunuwa	University of Bristol	Microsemi Semiconductor Ltd	Nanoelectromechanical relay-based electronics
Dr Abby Megan Jayne Paterson	Loughborough University	Central Scanning	Researching quality of additive manufactured parts and services
Dr Mehrnoosh Sadrzadeh	Queen Mary University of London	BBC Research and Development	Vectors and tensors for textual understanding of subtitles and news
Dr Hui Yu	University of Portsmouth	Emteq Ltd	Dynamic facial expression reconstruction from upper half-face data
Dr Zhenyu Zhang	University of Birmingham	DuPont Teijin Films	Nanotechnology enabled polyester film production

APEX AWARDS

In partnership with the British Academy and the Royal Society, and with the support of The Leverhulme Trust, the Academy launched the APEX Awards (Academies Partnership in supporting Excellence in cross-disciplinary (X) research). These awards aim to demonstrate how researchers from different disciplines sharing a common vision can come together to generate creative and innovative solutions that will benefit wider society.

Name	Subject	University
Professor Jennifer Barclay	Making sense of risk and uncertainty: narrative and metaphor in the face of volcanic activity	University of East Anglia
Dr Kate Robson Brown	The ontogeny of bone microstructure as a model of programmed transformation in 4D materials	University of Bristol
Dr James Burridge	Spatial theories of linguistic and cultural evolution	University of Portsmouth
Dr Marilina Cesario	Before and after Halley: medieval visions of modern science	Queen's University Belfast
Professor Rama Cont	Systemic risk: mathematical modelling and interdisciplinary approaches	Imperial College London
Professor Fay Dowker	The emergence of the continuum	Imperial College of London
Dr Andrew Duncan	Data driven profiling and assessment of conflicts in Africa	University of Sussex
Professor Robert Field	Exploring water re-use - the nexus of politics, technology and economics	University of Oxford
Professor Dave Goulson	People, pollinators and pesticides in peri-urban farming	University of Sussex
Professor Andrew Hogg	New models of sediment suspensions	University of Bristol
Dr David Horsell	Hot fuzz: bumble bee hair as a thermal metamaterial	University of Exeter
Dr Christina Lee	Nettles and networks: new ways to tackle wound infections	University of Nottingham
Dr Tom Mitchell	Exploring molecular data with immersive technology: interactive sonification in virtual reality	University of the West of England
Professor Stuart Murray	Engineering the imagination: disability, prostheses and the body	University of Leeds

ENTERPRISE FELLOWSHIPS

Enterprise Fellowships provide funding and support to entrepreneurial postdoctoral engineers, working at a UK university, to enable them to develop a spin-out business based on their innovation.

Name	Project title	University
Dr Nikolay Cherkasov	Stoli catalysts: cost-efficient pharma synthesis	University of Warwick
Dr Ben Dolman	Holiform	University of Manchester
Dr Emanuela Maggioni	OWidgets: smell-based experience design	University of Sussex
Dr Francesco Montomoli	TOffee: design for additive manufacturing	Imperial College London
Dr Hussam Muhamedsalih	Multi-wavelength polarising interferometer (MPI)	University of Huddersfield
Dr Zhutao Shao	Multi-X: affordable materials multiaxial testing	Imperial College London
Dr Joshua Steer	Next-generation external medical device design	University of Southampton
Dr Richard Taylor	Vector photonics: on-chip optical RADAR	University of Glasgow
Dr Yiwei Tian	COMMAND technology: one-step nanomedicine manufacturing	Queen's University Belfast
Dr Jonathan Widdowson	ProColl: commercialising novel collagen technologies	Swansea University
Dr Tongtong Zhu	Poro technologies	University of Cambridge

IRT ENTERPRISE FELLOWSHIPS

IRT Enterprise Fellowships provide funding and support to international PhD graduates based in the UK to develop their business skills so that they can build a business based on their innovation.

Name	Project title	University
Dr Dominika Behounek	Arya Audio Labs	University of Southampton
Dr Lorenzo Conti	Crover - grain storage monitoring	University of Edinburgh
Dr Rita Kanu	IntelliDigest	Heriot-Watt University
Dr Leonard Ng	Graphene-enhanced polyurethane-based wind turbine blade coatings	University of Cambridge
Dr Ruizhi Wang	HexagonFab allergen sensor	University of Cambridge

ROYAL COMMISSION 1851 ENTERPRISE FELLOWSHIPS

Royal Commission 1851 Enterprise Fellowships provide funding and support to entrepreneurial engineering graduates to develop their business skills so that they can build a business based on their innovation.

Name	Startup company	Project Title
Surakat Kudehinbu	RAB-Microfluidics R&D	Lab-on-a-chip technology for real-time oil analysis
Ben Lakey	Mitt Wearables	Mitt: comfortable, adjustable, accessible prostheses
Rowan Minkley	Chip[s] Board	An eco-friendly wood substitute made from industrial potato waste

LAUNCHPAD COMPETITION

The Launchpad Competition supports promising engineering entrepreneurs between the ages of 18 and 25 with a cash prize, training, mentoring, and support from the Gammon family, to enable them to start a business based on their engineering innovation.

Winner

Name	Startup company	Project title
Rowan Minkley	Chip[s] Board	An eco-friendly wood substitute made from industrial potato waste

People's Choice winner

Name	Startup company	Project title
Nate Macabuag	Mitt Wearables	Mitt: comfortable, adjustable, accessible prostheses

SME LEADERS PROGRAMME

The SME Leaders programme supports promising leaders of high-growth engineering SMEs with a grant towards the cost of training courses and executive education, plus monthly scale-up workshops at the Academy.

Awardee companies

Accelerated Dynamics X	Gravity Sketch	Paragraf
Axial Medical Printing	Loowatt	Reach Robotics
Cambridge Mechatronics	MediSieve	Skin Analytics
CyberOwl	Metis Labs	Sonobex
Diffblue	MIRICO	TGO
Duvas Technologies	mOm Incubators	Tokamak Energy
Femtogenix	Oxford Vision & Sensor Technology	VOID Technologies

GLOBAL CHALLENGES RESEARCH FUND FRONTIERS OF ENGINEERING FOR DEVELOPMENT SEED FUNDING

This scheme supports new interdisciplinary collaborative pilot projects between groups of two or more attendees of the Frontiers of Engineering for Development symposia.

Tranche 5 - The Circular Economy

Names	Institutions	Project title
Maria Alejandra Moreno Evdoxia Viza Bernardo Gonzalez	Cranfield University University of the West of Scotland Fomento Mexicano para el Desarrollo Sustentable	Circular economy in motion
Adit Shah Fiona Charnley Francesco Pomponi Gama Sibanda Jamal Mohamed Janaina Costa Lowell Scarr Max Affre	Space Platform Technologies Cranfield University Edinburgh Napier University Biomimicry South Africa ShambalIntel Sao Paulo University Nambu Sistema.bio	
Anna Bogush Zeinab El Maadawi Adrian Jones Burcu Karaca Ugural Levit Barry Nudi Jamal Mohamed Hassan Semih Erden	University College London Cairo University University College London Ege University Notonlab ShambalIntel Africa Limited Ege University	EduKid-CE - inspiring the younger generation with circular economy
Abdullahi Ahmed Andre Johan Nel Nokulunga Zondi Hafiz Alaka	Coventry University Eco-V SLE Farming Coventry University	Internet of Things software platform for integrated microgrid and vertical garden prototype
Francesco Pomponi Gama Sibanda Abimbola Windapo Taghried I. M. Abdel-Magid	Edinburgh Napier University Biomimicry South Africa University of Cape Town Sudan University of Science and Technology	Circular design of emergency sheltering for Africa: a holistic approach
Bernardino D'Amico Susan Snaddon Lara Alshawawreh	Edinburgh Napier University Formerly Arup Edinburgh Napier University	
Libu Manjakkal Werner Swart Ravinder Dahiya Anant Sham Raheja	University of Glasgow Drylobag University of Glasgow FIB-SOL Life Technologies	Post-harvest loss monitoring by sensors for improved food security
Muyiwa Oyinlola Timothy Whitehead Anna Lowe Siddharth Hande Reza Baserinia Mark Prince Laura Leslie	De Montfort University Aston University ioinnovations Kabadiwalla Connect De Montfort University Aston University Aston University	Wealth from waste: value added products for Chennai waste pickers

Tranche 6 - Engineers as Healthcare Practitioners

Names	Institutions	Project title
Amir Keshmiri Nutthaphol Khupsathianwong Michael McElroy Surapong Chatpun Soracha Thamphiwatana Hoang Minh Tu Van	University of Manchester Prime Nanotechnology Medical Simulation Technologies Ltd Prince of Songkla University Prince of Songkla University Oxford Clinical Research Unit	Feasibility of the first scaled-up nanoparticle synthesis for antimicrobial resistant infection treatment (NANOSYN)
Alejandra Aranceta-Garza Hoang Minh Tu Van Darino Farina Le Thanh Hoang Nhat Le Nguyen Thanh Nhan	University of Strathclyde Oxford Clinical Research Unit Imperial College London Oxford Clinical Research Unit Children's Hospital 1	Understanding of neurophysiological symptoms of severe hand, foot and mouth disease
Julien Reboud Ngo Tat Trung Melanie Jimenez Quyên Thanh Dao Nguyen Sy Thau Andrew Farthing Alice Garrett Zhugen Yang	University of Glasgow Tran Hung Dao University Hospital University of Glasgow Tran Hung Dao University Hospital Tran Hung Dao University Hospital University of Glasgow University of Glasgow University of Glasgow	Origami paper-based tests as sustainable sepsis diagnosis for LMICs
Vijayalakshmi Velusamy Stephen Tashobya Mirfin Mpundu Margaret Ilomuanya Noma Ndiweni	Manchester Metropolitan University Wekebere Ecumenical Pharmaceutical Network University of Lagos National University of Science and Technology	Low-cost pregnancy diagnostic device for sub-Saharan Africa: pre-eclampsia detector
Sebastiano Fichera Vijayalakshmi Velusamy Brian Turyabagye Alejandra Aranceta-Garza Paolo Paoletti Olivia Koburongo	University of Liverpool Manchester Metropolitan University MamaOpe University of Strathclyde University of Liverpool MamaOpe	Development of low-cost remote health diagnostic/monitoring systems for low-income countries
Julien Reboud Peter Lubell-Dughtie John Bosco Kalule Victor Jalil Ochoa Gutierrez Erick Ngwiri Megan Schroeder	University of Glasgow Ona Makerere University University of Glasgow Ona Ona	Low-cost disease surveillance to link healthcare interventions in remote communities
Alan Godfrey Rodrigo Vitorio Azad Hussain Marcos E. Barreto Clara Aranda-Jan	Northumbria University Instituto de Biociências de Rio Claro University of Birmingham Federal University of Bahia University College London	Standardisation of wearable algorithms for healthcare applications in developing countries

LEADERS IN INNOVATION FELLOWSHIPS

The Leaders in Innovation Fellowship (LIF) programme is aimed at researchers from emerging economies who have an innovation that helps address their country's development needs, and offers an intensive two weeks of entrepreneurship training and mentoring to help them commercialise their innovation. This year, the Academy delivered training to 220 researchers over the course of six months, from Brazil, China, Colombia, Egypt, Indonesia, India, Kenya, Malaysia, Mexico, Peru, the Philippines, South Africa, Thailand, Turkey, and Vietnam, as well as representatives from 12 in-country delivery partner organisations. Entrepreneurs bring their technologies to the Academy to develop their proposition to market.

Full name	Country	Innovation title
Hamdy Abdelaty	Egypt	Gamification of secondary schools' science curriculum - such as chemistry, biology, and physics
Mohamed AbdelRaheem	Egypt	Micro-PMU: A smart monitoring system for distribution electrical power grids
Justine Nyaruri Abuga	Kenya	A solar stove for rural families eliminating the need for firewood and charcoal for cooking
Mario Sergio Adolphi Junior	Brazil	Pipoh - CleverCare hospital guidance
Sarviin Ageelen	Malaysia	Drone flying over the internet
Gabriel Aguirre-Alvarez	Mexico	Extraction of ovine collagen for application in food, cosmeceutical and biomedical industry
Ahmad Athif Mohd Faudzi	Malaysia	Remotely operated vehicle for underwater cleaning and monitoring
Serdar Akdeniz	Turkey	An orthodontics module for clinic use and education
Akhsan Fakhurozi	Indonesia	Ursulat acid extraction from tembesu fruit, a local plant from Sumatera
Martín Andre Alburqueque Castillo	Peru	Structural integrity through dynamic analysis in operating conditions
Pascal Omolo Aloo	Kenya	An automated vending machine that sells water with no need for an attendant
Dr Gamal Ammar	Egypt	Producing a minimised or bitterness-free aftertaste stevia sweetener with low Reb-A
Noppadol Aroonyadet	Thailand	Quick diagnostic biosensor chip
Richard Arwa	Kenya	A liquid bio ethanol energy developed from cellulose waste materials
Xue Bai	China	Forensic DNA testing series kit
Mpho Baisitse	South Africa	Uni-flight drone
Robert Kerwin Dela Cruz Billones	Philippines	PUBFIX: Public transport and truck fleet management and dispatch system
Juliane Cristina Borba	Brazil	A fast, low cost and non-invasive test for bladder cancer diagnostic
Shashikant Burnwal	India	Data over sound
Renzo JC Calderon Anyosa	Peru	Kuska Tele-Wasi: An SMS home blood pressure telemonitoring system for hypertension control in primary care centres
Michelle Salvino Carbonell	Philippines	Queen pineapple technologies (QPTech)

Full name	Country	Innovation title
Amaury Caruzzo	Brazil	SW Platform: Space Weather decision support and early warning system for critical infrastructure protection
Amol Chaphekar	India	Outdoor air pollution controllers
Ratthaphol Charlermroj	Thailand	PlantBead kit: Multiplex detection of plant pathogens using an antibody-based bead array technology
Khaya Cokoto	South Africa	Moyr
Christopher Enriquez Cruz	Philippines	DLSU - Intellectual property management program for commercialising technologies
Thu Cu	Vietnam	Production quick stick to early diagnose pregnancy in cattle using monoclonal antibody
María Alejandra Culman Forero	Colombia	AgroRIEGO: helping farmers to irrigate their crops smartly
Elmer Jose Pamisa Dadios	Philippines	Vision-based AI analytics software for traffic and transport applications
Rolyn Cutamora Daguil	Philippines	MAPX: My application and payment for locations and boundaries
Qing Dai	China	Non-invasive salivary glucose test system
Maria Angélica de Camargo	Brazil	Production of recombinant dengue virus proteins for use in rapid diagnostic tests
Jeffrey Tamba Dellosa	Philippines	A start-up and a transportation application that is specially built for tricycle drivers and commuters
Aditya Deshpande	India	Suspension energy recovery system
Joaquin Diazsolano	Mexico	Energy from biomass, sustainable electricity and power
Brett Drury	Brazil	Risk models for agriculture
Hany El-Bassossy	Egypt	Cardio-protective pharmaceutical formula
Mahmoud ElRayes	Egypt	Self-healing bio-mortar for restoration of historic constructions
Petro Erasmus	South Africa	Maths whartels
Farhaniza	Indonesia	Processing a cocoa butter into personal skincare products
David Florez	Colombia	Rama
Khalid Mahmoud Mohamed Gaafar	Egypt	Production and marketing of safe microbial liquid product, used for improvement of nutritional value of agricultural wastes for animal feed
Irene Gabriel	Egypt	Commercialisation of innovative polymer nanocomposites for industrial applications
Carlos Galindez-Jamioy	Colombia	Optical spectral tool for agriculture
Ana Gabriela Gallardo Hernández	Mexico	Smart accessory for white cane
Antonio Garza	Mexico	Linkaform
Wilson Matumbi Gichuru	Kenya	Buji drones
Levent Gönültaş	Turkey	The new, ideal and universal conformity index algorithm and software for radiotherapy treatment planning
Gaspar Gonzalez Briceno	Mexico	Educational model for basic educational classrooms
Vikram Gulecha	India	OCEO - the new access to safe drinking water

Full name	Country	Innovation title
Thando Gumedde	South Africa	M-Teto
Shihui Guo	China	Vision-based fall detection system for old people
Alper Gurarslan	Turkey	Elastic conductive yarn (Ecoyarn)
Narayan Lal Gurjar	India	EF Polymer Private Limited
Tung Ha Anh	Vietnam	Heat pump dryer for agricultural products
Haitham S Hamza	Egypt	A platform for IoT-based innovative campus
Novita Hartono	Indonesia	Ozone care
Walter Heredia	Peru	Connecting physician with patients through a multiplatform to improve the prevention of people health
Alher Mauricio Hernandez	Colombia	Body contact pressure monitoring system
Zuhra Junaida Mohamad Husny	Malaysia	HACADEMY
Abdelkhalek Hussein	Egypt	Permanent magnetic sterile insect trap
Rahinah Ibrahim	Malaysia	Seaweed support program: a technology intervention for community economic development
Kutay Icoz	Turkey	Air particle measurement system
Ammorn Insung	Thailand	Natural products for pest control
Luis Izquierdo	Peru	Methodological framework to integrate social and physical vulnerability in the prevention of seismic risk
Norziana Jamil	Malaysia	CUTEn
Taijiao Jiang	China	Big medical data processing and AI
Mustafa Kahraman	Turkey	Synchronised drug monitoring system
Muzaffer Kanaan	Turkey	Wearable TENS (transcutaneous electrical nerve stimulation) device
Chiraag Kapil	India	Leaf
Ilker Karadag	Turkey	Archidynamics
Ai Karwati	Indonesia	PKMNET (Palm Kernel Meal (NET)): alternative feed ingredient as protein and energy sources in feed industry
Pin Jern Ker	Malaysia	Low cost and portable optical sensing device to measure the concentration of inhibitor content in transformer oil at near infrared wavelengths
Keneiloe Kganane	South Africa	Health Sma2rt snacks from climate-smart crops
Ziad Khalifa	Egypt	Novel nano-sensors for assessment of heavy metals in water
Pham Trung Kien	Vietnam	Fabrication of calcium phosphate biomaterials for bone defect treatment
Kenneth Melendres Kim	Philippines	A cost-effective, hands-on, inquiry-based, lab-in-a-box tool kit that enables teachers and students to do biotechnology experiments in the classroom
Anupam Lavania	India	Cerebo
Le Minh Ha	Vietnam	Natural Cough Medicine – 4 in 1
David Leyton Cifuentes	Colombia	Diretsol (diabetic retinopathy solution)

Full name	Country	Innovation title
Xiang Li	China	The experience and service design of customised footwear and shoe store
Yong Li	China	DC-DC boost converter that link with EV batteries and fuel cell
Franz Joseph Damasco Libao	Philippines	Hybrid electric road train
Sefer Bora Lisesivdin	Turkey	Production of compact USB fibre UV-vis-NIR optical spectrophotometer for industrial and scientific purposes
Yi Liu	China	National energy internet innovation and entrepreneurship centre
Oscar Enrique Llerena Castro	Peru	Design and implementation of lower-cost cellular networks using open source software and software defined radio based hardware.
Juan David López Taborda	Colombia	Bioprocess to produce an environmentally friendly insect controller agent from neem (<i>Azadirachta indica</i>) cell culture
Constantino López-Macías	Mexico	Nanoparticles to improve vaccines protective capacity
Abraham Israel Luis Peña	Peru	Nad, the world's first smart gadget to agile walking in recreational sports
Punyawon Lumpaopong	Thailand	MoWIT: Bone cement spacer moulds for treatment of infected knee arthroplasty
Edson Luque Mamani	Peru	Automatic classification of cancer tumors using ePAD
Xi Ma	China	Development and application of green efficient and safe bio-fermented feed
Xiaoding Ma	China	UGOHOUS: Internet technology for new retail industry.
Yong Ma	China	Key technologies and equipment for emergency response and energy management based on cloud computing data centre
Chinmaya Mahanta	India	StrautX - Creating clean energy abundance for billion lives
Kevin Mureithi Maina	Kenya	The greener building material from plastic waste and glass
Miguel Malnati Ramos	Peru	Bio Natural Cover
Vimal Govind MK	India	Bandicoot - Robotic scavenger for cleaning manholes and sewer lines
Linah Maphanga	South Africa	Renewable carbon fibre
Romualdo Cadiante Martinez	Philippines	Greenhouse solar dryer with biomass furnace for drying of coffee and other agricultural products
Maria Cristina C Nucci Mascarenhas	Brazil	Microencapsulated food ingredient with functional and structural characteristics to use in trans free fat systems
Panomsak Meemon	Thailand	Low cost OCT retina scanner for out-reach community
Hassan Mohamed	Malaysia	Senslar - Smart and sensitive solar floating platform
Nurul Husna Binti Mohd Yusoff	Malaysia	Empty fruit bunch (EFB) as low cost absorbent and alternative solution of bio-plastic
Mareka Mokoena	South Africa	Eye drops for the treatment of cataract
Juan Manuel Montes Hincapie	Colombia	Modular system of coverage of spaces for camps and temporary installations that includes self-generation of energy through solar panels
Alcides Montoya	Colombia	Plant factory: basic units for nutritional security
Eduardo Mattos	Brazil	Development of computational platform for forest productivity management

Full name	Country	Innovation title
Felipe Adrian Moreno vera	Peru	Design and implementation of a fog computing platform
Samy Nazareno Mori Cubas	Peru	Glucolib – Non-invasive system for blood glucose measurement
Tshwafo Motaung	South Africa	Manufacture of environmentally friendly bio bricks
Sarah Gabashwediwe Mungodla	South Africa	Bio-pros waterless toilet system
Amsa Mustaqim	Indonesia	Replus remote : universal remote to control electrical appliances from anywhere to reduce energy consumption
Anthony Karimi Muthungu	Kenya	AlexKayn: Increasing mobility of the visually impaired
Bryan Dawson Wachira Mwangi	Kenya	Pyro-degrade waste management
Samwel Kimani Mwaniki	Kenya	Practical utility vehicle
Peter Gichuhi Mwethera	Kenya	Products aimed at improving sexual/reproductive health, maternal and child health
Katawut Namdee	Thailand	Pathogen-mimicking nanovaccines for fisheries and aquaculture
Daniel Navarro	Brazil	Development of biofunctional materials for application in the regenerative medicine, tissue engineering and advanced therapy of bone defects
Abide Ncube	South Africa	Smart e-Bin
Long Nguyen	Vietnam	Negative-emission and renewable energy solution
Chinh-Nghia Nguyen	Vietnam	Technology of protein-rich animal feed production from by-products of ethanol production process
Nguyen Quang Trung	Vietnam	Researching, preserving and developing Yacon (<i>Smallanthus sonchifolius</i>) in accordance with GACP-WHO to create community health care products
Nguyen Viet Anh	Vietnam	Firewatcher
Fernando Garcia Nicodemos	Brazil	BioBOT: A new equipment for autonomous loose parasitised eggs releasing through remotely piloted aircrafts.
Baisheng Nie	China	The technology and equipment with extremely low concentration coal mine gas to generate electricity
Peter Mwangi Njeri	Kenya	Clean and affordable cooking gas from plastic waste
Suikinai Nobre	Brazil	National production of L-Asparaginase from <i>Streptomyces caatingaensis</i> CMAA1322
Azah Anir Norman	Malaysia	Quran verse verifier
Fortune Nosi	South Africa	NB-POCKET
Ntokozo 'Meloh' Ntleko	South Africa	The Petros Dryer: Shoe-drier
Nurhanifa	Indonesia	FUGHA 'Fusarium Gaharu' agarwood inoculant, a microbial probiotics from fusarium sp fungi to improve production of agarwood (Gaharu)
Feroza October	South Africa	Anti-oxidants, micro- and macro-nutrients fortified jams
Jack Omondi Oyugi	Kenya	High value protein for animal feed from water hyacinth
Christopher Orbigo Pacardo	Philippines	Method for breeding of true-to-type camarines strain native chicken
Pankaj Parashar	India	Cutting Edge Medical Devices Pvt Ltd

Full name	Country	Innovation title
Gunjan Patel	India	i-Sense: Smart wearable and portable device for gait analysis for clinical assessment of movements disorders
Ernesto Perez	Colombia	Surge protector monitoring system
Waranyoo Phoolcharoen	Thailand	Transient plant-based expression system for biopharmaceutical production
Natanael Leitão	Brazil	Development of probiotics additives for animals raised in tropical weather
Rahmat Irfan Pohan	Indonesia	Noire pomade
Atchara Poomee	Thailand	PAC Frenergy heat recovery water heater
Wirulda Nik Pootakham	Thailand	DNA-based purity testing for hybrid fruit and vegetable seeds
Samuel Portocarrero	Peru	Automatic measurement and acquisition system of the scattering pattern of radiant sources
Panida Prompinit	Thailand	Scale-resistance cellulose evaporative cooling pads
Arintiara Ramadhystasari	Indonesia	Instant gluten-free moringa cake - an instant, eggless and gluten-free cake mix with superfood moringa
Daniel Ramirez	Colombia	Paint a cable to illuminate your life
David Ramos	Colombia	Bio-CO ₂ -capture to reduce transportation emissions.
Nishant Singh Rana	India	Vyorius: Last mile delivery network of drones
Juthamas Ratanavaraporn	Thailand	Contact lens controlled releasing pharmaceutical agents
Thaila Reis	Brazil	Development of a natural antifungal agent, obtained from a plant extract, to increase the shelf-life of 'in natura' food products
Victor Reyes	Mexico	EDTA with silver nanoparticles for root canal treatment
Samuel Wanderi Rigu	Kenya	Safi organics sarvi fertilisers
Sascha Nadja Ringlstetter	Mexico	Cloud-based advanced residential solar inverter
Joy Nyawira Riungu	Kenya	Paradigm shift in human faecal matter handling within dense population settlements for a sustainable environment and water and food security
Edwin Mugendi Riungu	Kenya	Online enterprise planning (ERP) software
Enzo Romero	Peru	Giving a Hand: personalized hand and fingers prosthesis to people of low income using digital manufacturing technology
Leo Mendel Dilag Rosario	Philippines	Biocomposite airframe structures for unmanned aerial vehicles
Jessi Christa Revilla Rubio	Philippines	Compute and Archiving Research Environment (CoARE)
Marian Serna Imbachi	Colombia	Self-adaptive hand prostheses
Nur Anindya Setiyaningsih	Indonesia	The first dishwashing liquid soap made of fermented starfruit extract (sunti acid)
Doaa Refaat	Egypt	Innovation of a smart bovine viral diarrhoea disease immunodiagnostic tool based on nanotechnology and molecular imprinted polymers
Cesar Sierra	Colombia	Active packaging for tropical fruits
Andrea Siller González	Mexico	RECOPAD by Bioana - urine sample collection for dependent patients
Filmann Taput Simpao	Philippines	The tools and facility to improve the poor practices in handling mango production

Full name	Country	Innovation title
Himmat Singh	India	PBot- Autonomous water free cleaning system for solar panels
Abhimanyu Singh	India	Ready to assemble green homes
Badariah Solemon	Malaysia	myASSET : Application for registering, mapping, tracking and managing assets
Celestin Soubrier	Mexico	Jetty: Setting the standard in transportation in Mexico
Arnulfo Jose Suarez	Mexico	Cattle management
Ferry Alif Punama Sugandhi	Indonesia	inFishta: cloud aquaculture with crowdfunding scheme
TA Thi Minh Ngoc	Vietnam	N-food from Gac fruit
Ta Thi Luong	Vietnam	Anti - HPpro - Difference from Nature
Pamela Raye Mislos Tadeo	Philippines	Protein-enriched copra meal (PECM)
Siddhant Tawarawala	India	Mobile urinal gear
Peter Immanuel de Loyola Tenido	Philippines	Agapay
Soracha (Kun) Thamphiwatana	Thailand	NanoCollagen patch
Aluck Thipayarat	Thailand	Easy-to-use, effective and eco-friendly surface steriliser
Seda Tolun Tayali	Turkey	Web-based financial portfolio optimisation software
Tran Thi Oanh Yen	Vietnam	Red flesh Dragon fruit LD1 and new fruit cultivars or scientific products to serve production
Gustavo T Valio	Brazil	bHealed
Irene Tsele	South Africa	Traditionally extracted oil from ricinus communis beans
Tu Diep Cong Thanh	Vietnam	Novel spinal decompression machine and compatible control method
Ramazan Unal	Turkey	WalkMECH: Innovative transfemoral prosthesis
Julian Urresta	Colombia	Development of nanostructured, portable and low-cost electrochemical biosensor platforms for the determination of analytes of interest in clinical diagnosis
Fathoni Usman	Malaysia	Value engineering advisory system (VEAS)
Ugur Uzuner	Turkey	Development and production of antifungal bio-stimulant preparations to prevent fungal diseases in agricultural plants
Veronica Valadez-Rocha	Mexico	Power management-aqua advisor
Virgilio Valdes Lopez	Mexico	Ultralight and water-retainer green roof substratum
Ma. Fabiola Valdivia Francia	Peru	Development of lateral flow assay devices for the diagnosis of dermatologic diseases
Kasturi Dewi Varathan	Malaysia	Enriching the users with better decision making through opinion mining
Andrés Varela	Mexico	NANTO: water repellent
Sheyla Vargas	Brazil	Development of an integrated solution for pre-slaughtered stunning of farm fish through eletronarcosis
Rodrigo Vega Centeno	Peru	IRBin: Intelligent recycling bin
Vo Thi Tra An	Vietnam	Guava leaf syrup for piglets

Full name	Country	Innovation title
Kitiya Vongkamjan	Thailand	Novel encapsulated salmonella bacteriophages as a bio-disinfectant
Ganesh Vythilingam	Malaysia	Regenosca scaffold
Leong Sing Wong	Malaysia	Biologically engineered bacterial bricks for green construction
Shuwei Wu	China	Pan-space imaging with interactive technology
Levent Yavuz	Turkey	EyeLab
Sirida Youngchim	Thailand	An immunodiagnostic kit for penicilliosis marneffeii using immunochromatographic method
Tarek Sabry	Egypt	Zero energy compact unit (ZECU) for wastewater treatment in rural areas
Duygu Yücel	Turkey	New medical device for measuring human cerebrospinal fluid (CSF) pressure

GLOBAL CHALLENGES RESEARCH FUND AFRICA CATALYST

Africa Catalyst aims to strengthen professional engineering bodies in sub-Saharan Africa so that they can effectively promote the profession, share best practice and increase local engineering capacity to help drive development. This is supported by high-quality research focusing on expanding the evidence base for the importance of robust engineering institutions and the role they play in delivering sustainable growth, and mapping engineering capacity and diversity in the countries where grant funding is administered. No awards were made in 2018, but the following were active.

Lead applicant	Organisation	Project title
Eng Osazoduwa Agboneni	Nigerian Institution of Mechanical Engineers	NiMechE Innovation Challenge 2.0
Dr Allyson Lawless FREng	South African Institute of Civil Engineers	Engineering membership management system
Naadiya Moosaje	WomEng	Capacity building for women in engineering bodies in sub-Saharan Africa
Eng Trudy Morgan	Sierra Leone Institution of Engineers	Upgrading engineering training and practice in Sierra Leone
Eng Dr Dorothy Okello	Uganda Institute of Professional Engineers	Strengthening diversity and inclusion in Uganda's engineering sector
Bernard Ordams	Federation of African Engineering Organisations	Building the capacity of FAEO
Professor Jeff Smithers	South African Institute of Agricultural Engineers	Growing agricultural engineering in Africa by supporting the establishment of AfroAgEng
Cecile Uwimana	Institution of Engineers Rwanda	Bridging the gap between engineering workforce skills needs and young graduate competencies to foster their employability

HIGHER EDUCATION PARTNERSHIPS IN SUB-SAHARAN AFRICA (HEP SSA)

This programme forms and strengthens relationships between academia and industry, aiming to ensure that the higher education system in sub-Saharan Africa produces engineers with the skills and knowledge required to meet the needs of industry and tackle local challenges. It also addresses the engineering skills shortage in sub-Saharan Africa and showcases engineering's role in driving economic development in the region.

	Lead applicant, hub university	UK university partners	Spoke university partners	Industry partners	Project title
HEP SSA hubs	Dr Omonigho Otanocha, Federal University of Petroleum Resources, Nigeria	Brunel University	Edo state University, Federal University Ndufu Alike, University of Abuja, Federal University of Agriculture	Future Africa Ltd, PRESCO PLC, PIND Foundation, CMADI, Steve Emma & Associates Ltd, Foundry Works	Biogas for sustainable energy and off-grid power
	Dr Antony Mamuse, Midlands State University, Zimbabwe	University of Strathclyde, Cardiff University	Stellenbosch University, Chinhoyi University of Technology, National University of Science and Technology, Zimbabwe	Mimosa Mining Company Zimbabwe, SIRDC	Assessment of Zimbabwe's industrial minerals and coloured gemstones
	Gilles Teguem, Institut Saint Jean, Cameroon	King's College London, The Open University	University of Engineering and Entrepreneurship, The Catholic University, The Institute of Buea, University of Buea	Luminno Ltd, SSN, ICCSOFT, Matric Telecom, Societe Generale	Engineering capacity building in Cameroon through curriculum reinforcement and the creation of a fablab for engineering prototyping and commercialisation
	Dr Consalva Msigwa, Dar es Salaam Institute of Technology, Tanzania	University of Leeds	University of Marien Ngouabi, Makerere University, University of Dar es Salaam	TANESCO, TaTEDO	E4R Education for Renewables
	Dr Bernard Odera, Technical University of Kenya	University of Hertfordshire	Machakos University, Muranga University of Technology, Masinde Muliro University of Science and Technology	Bamburi Cement, Engineers Board Kenya	Professional engineering registration of university lecturers through university-industry-professional body partnership
	Professor Bavo Nyichomba, University of Dar es Salaam	Warwick University	Mbeya University of Science and Technology, Nelson Mandela African Institution of Science and Technology, Sokoine University, Makerere University, Moi University, Dar es Salaam Institute of Technology	Tanzania Electrical Mechanical and Electronics Services Agency, TANESCO, Tanzania Ports Authority, Kilombero Sugar Company, Pyorl Tanzania Ltd	Building strong and innovative higher learning engineering institutions in sub-Saharan Africa through partnerships

	Lead applicant	UK partners	Project partners	Project title
HEP SSA Sustainability Fund hubs	Professor Simiyu Sitati, Moi University Kenya	University of Highlands and Islands	Kenya Industrial Development Institute	Enhancing quality of engineering training at Moi University through industry, regional and UK universities linkages
	Dr Herbert Mapfaira, University of Botswana	N/A	Association of Consulting Engineers Botswana	Stakeholder engagement for sustainable partnership
	Professor Henry Alinaitwe, Makerere University, Uganda	University of Leeds	N/A	Strengthen university industry partnerships for academic excellence and innovativeness
	Dr William Goriwondo, National University of Science and Technology, Zimbabwe	University of Manchester	N/A	Harnessing UK partnerships and stakeholder engagement for HEP SSA sustainability of engineering education at NUST
	Dr Eng Wilson Nyemba, University of Zimbabwe	University of Leicester	University of Johannesburg	Strengthening ties and bridging the gap between industry and academia using a systems thinking approach for capacity building and sustainability

INDUSTRY-ACADEMIA PARTNERSHIP PROGRAMME

Under its remit as a delivery partner of the Newton Fund, the Academy is implementing the Industry-Academia Partnership Programme, which aims to build engineering teaching, research and innovation capability in Newton Fund partner country universities through building bilateral industry-academia links. This programme also aims to foster greater ties between engineering research and innovation stakeholders in both countries.

	Lead University	UK university	Industry partner(s)	Project title
Colombia	Universidad Industrial de Santander	The Open University	Nanofique Limited, Alianza Del Humea	Smart coating systems on natural fibres for wastewater treatment
	Universidad Cooperativa de Colombia	Heriot-Watt University	Aquatera Ltd, COTECMAR, Smart Hydro Power Ltd	Enhancing aquatic renewable energy: technology design and adaptation programme for Colombia
	Universidad Nacional de Colombia	University of York	Team Foods	Valorisation of urban used cooking oils by transformation into value added oleochemicals. Study case for Bogota, Colombia
	Universidad de los Andes, Universidad del Rosario	Earlham Institute	PSL SAS	Developing capabilities in high-performance digital infrastructure for data intensive scientific innovation in Colombia
	National University of Colombia	University of Strathclyde	Compañía de Empaques SA	New environmentally-friendly natural fibre composite materials for low-power wind turbine blades for rural areas
	Universidad Nacional de Colombia	Heriot-Watt University, University of Nottingham	Ecopetrol SA, Equión Energía Limited	Asphaltene dynamics at the pore-scale and the impact on oil production at the field-scale
	Universidad Industrial de Santander	Northumbria University	Gematech SAS	Development of a small-scale combined waste-to-bioenergy system with solar organic Rankine cycle for heat and power production in rural areas of Colombia
	Universidad EIA	The Welding Institute	Metro de Medellin	Implementation of friction stir welding in the Colombian rail transport sector
	Escuela Colombiana de Ingeniería Julio Garavito	University College London	Prótesis Avanzadas	Prehand project: affordable and modular prosthetics and exoskeletons for hand rehabilitation and assistance
	Universidad EIA	City, University of London	Shaio Clinic, Tekcapital	Collaborative innovation cells: towards an effective technology development platform that aligns the market pull with the technology push through a collaboration between academia and industry and the implementation of agile methodologies
Universidad EIA	University College London	EPM, ERCO	Transactive energy Colombia initiative	

	Lead University	UK university	Industry partner(s)	Project title
Colombia	Universidad Pontificia Bolivariana	Newcastle University	GeoMares S.A.S, Parques Nacionales Naturales de Colombia, Centro de Investigaciones Oceanograficas e Hidrograficas del Caribe	Using remotely piloted aircraft systems as tools for coral reef monitoring, management, and stakeholder engagement
	Universidad del Valle, Universidad Autonoma de Occidente	Loughborough University	Kyrios SAS	Evaluation of heavy metals in freshwater to prevent and alert human consumption
	Escuela Colombiana de Ingeniería Julio Garavito	Cardiff School of Engineering	Ingeniería en Galvanizados de Occidente SAS, Sexton Materials Research Ltd	Design and additive manufacturing of a new composite al-calamine material through a bilateral collaboration between Colombian and UK industry and academia
	Universidad Nacional de Colombia - Medellín Campus	University of Leeds	Mineros SA	Building research and innovation capabilities for the sustainable exploitation of black sands as a source of rare earth elements

	Lead University	UK university	Industry partner(s)	Project title
India	Hindustan Institute of Technology	London South Bank University	NUGENIX	Development of a mobile wall climbing robot for the internal non-destructive testing of storage tanks and for project based learning on mechatronics programmes
	Indian Institute of Technology Indore, IIT Bombay, Maharashtra Institute of Technology, Acropolis Institute of Technology and Research	University of Cambridge	Mahindra and Mahindra Ltd, Grind Master Machines Pvt Ltd, AceMicromatic MIT, Enman Automation Pvt Ltd, ADW Technologies Pvt. Ltd, Dimension NXG, Pragati Engineering Works	Industry-academia consortium for digitisation in small and medium enterprises
	Vellore Institute of Technology, PSG College of Technology	Loughborough University	Valeo GEEDS	Design and development of a four-wheeled electric vehicle for research, teaching and outreach in Tamil Nadu, India
	Vellore Institute of Technology	Cranfield University	Tata Lockheed Martin Aerostructures Ltd	Enhancing research-based learning and teaching on advanced materials and manufacturing technologies for aerospace sectors in India and UK
	Gandhi Institute of Technology and Management, Jadavpur University	Aston University	Precision Transmission Chain, Neogi Technologies and Research Pvt Ltd, Kusari Enterprise, Klystron Electronics, Fenstar Industries, IB Engineering Private Ltd, AE Aerospace, CoMech Metrology Ltd, Composite Braiding, Foxwood Diesel, Freshlook Solutions Limited, Advanced Engineering	Circular economy adoption within small and medium sized enterprises in India and the UK
	KIET Group of Institutions	Cranfield University	MicroMaterials Limited, Energy4U, Larsen and Toubro Limited	Indo-UK led curriculum development through sustainable materials and manufacturing for the future
	National Institute of Technology Karnataka, Basaveshwar Engineering College	University of Leeds	ACC Limited, Mott MacDonald	Collaborative research and capacity building on climate resilient concrete for marine environment
	PSG College of Technology	Newcastle University	PSG Industrial Institute	Digital literacy: shaping industry 4.0 engineering curriculum via factory pilot-demonstrators

	Lead University	UK university	Industry partner(s)	Project title
Jordan	German Jordanian University	Newcastle University	Innovation, Business, Technology, Entrepreneurship, Creativity for the Arab Region	Innovative peer to peer electricity sharing towards the development of smart and cooperative microgrids
	Al- Balqa' Applied University	Northumbria University	New World for Water Technology, Al-kawkabah Alkhadhra for Renewable, Aquamcorp Water Services	Improved waste water treatment technology integrating renewable energy for arid regions
	University of Jordan, The Hashemite University	University of Sheffield	The Public Warehousing Company - Agility Jordan	Developing an international warehouse assessment scheme
	Royal Scientific Society	University of Bath	Kingdome Concrete Company	Waste wash water recycling in ready mix concrete plants
	Jordan University of Science and Technology	University of Sussex Business School	Hikma Pharmaceuticals LLC	Operations management in the pharmaceutical industry
	University of Petra	Salford University	Jordan Tourism Board, Bentley Systems Incorporated	IT and conservation of traditional architecture and heritage

	Lead University	UK university	Industry partner(s)	Project title
South Africa	University of the Witwatersrand (lead), University of the Western Cape, Tshwane University of Technology	University of Cambridge	Council for Scientific and Industrial Research, KDG Logistics, Unitrans, Michelin, Transnet, Volvo	Towards sustainable road freight - UK and South Africa joint action
	University of KwaZulu-Natal, University of Stellenbosch, Central University of Technology, University of Pretoria	University of Bath	SANCOLD, Water Resource Commission, SANRAL	Development of multi-institutional research collaboration and capacity development for modernising flood risk assessment practice in South Africa
	University of Cape Town	University of Warwick	Carmien Tea, New Food-Innovation Ltd	Virtual flavour: research and education for a step-change in it business innovation
	University of Cape Town, Central University of Technology South Africa	Edinburgh Napier University	National Home Builders Registration Council	Research informed teaching of sustainable development in South Africa: the case of 'local' building materials and their environmental impacts

	Lead University	UK university	Industry partner(s)	Project title
Thailand	King Mongkut's University of Technology North Bangkok, Mahidol University	Swansea University	Suksomboon Group Ltd	Production of medium chain length polyhydroxyalkanoates (MCL-PHAS) from palm oil
	Chulalongkorn University	Kingston University London	Pong Yaeng Agriculture, Anamad Ltd, UK	Biochar from macadamia nut shells for removal of emerging pollutants in wastewater
	King Mongkut's University of Technology North Bangkok	Imperial College London	SCG	CO ₂ utilisation: advanced membrane technology in clean DMC production
	Mahidol University	University College London	Prodo.AI, ProGaming, CourseSquare, Trinity Roots, Robolingo (Zwiz.AI)	Automated software engineering for Thailand software industry
	Mahidol University	University College London	Office of Transport and Traffic Policy and Planning, London Underground Limited, Transport for London, SRT Electrified Train Co Ltd	Smartmetro: smart metro operations enhancement through data analysis
	King Mongkut's University of Technology Thonburi	University of Sheffield	Tesco Lotus	Smart farm planning and monitoring system
	Prince of Songkla University	Queen's University Belfast	Green Lizard Technologies, Fiberight	Waste management and valorisation in the Thai Gulf islands
Mahasarakham University	University of Leeds	BCE	Translating physicochemical properties of Thai rice at its microstructural level into formulation of functional food rice-based products	

	Lead University	UK university	Industry partner(s)	Project title
Turkey	Piri Reis University	Heriot-Watt University	Logosoft	Preparing Turkish SMEs for industry 4.0
	Sakarya University	Coventry University	Oztiryakiler Co	Design and construction of a prototype industrial oven for better heat distribution and energy efficiency
	Middle East Technical University	University of Aberdeen	Parabol	Evaluation of the public transportation performance and accessibility based on smart card data

UK-CHINA URBAN FLOODING RESEARCH IMPACT PROGRAMME

Under its remit as a delivery partner in the UK-China Newton Fund, the Academy is partnering with the Chinese Academy of Engineering to implement the UK-China Urban Flooding Research Impact programme. This programme aims to support impactful research and enhance the impact of existing research in urban flooding in both countries by encouraging bilateral collaboration between academics and government as well as wider industry.

UK academic and industry partners	Chinese academic and industry partners	Chinese government partner	Project title
Swansea University, HR Wallingford	Nanjing University of Information Science and Technology, Nanjing Hydraulic Research Institute, Naruida Technology	Guangzhou Meteorological Observatory	Early warning system for urban flooding in Chinese mega cities using advanced active phased array radar
University of Exeter, Jacobs, Sweco	Tsinghua University, NCMEDRI, Suzhou University of Science and Technology Co Ltd	Torbay Council, Local authorities of Doumen (Zhuhai), Ningbo, Pingxiang, Qingdao and Suzhou	ESPRIT: embedding strategic planning in flood resilient cities
Cardiff University, Wallingford Hydro Solutions	Wuhan University, Beijing Tepia Technology Company Ltd	Hubei Provincial Department of Water Resources	Studies on disaster-causing mechanisms and disaster reduction countermeasures of urban flooding in China and the UK
SOAS University of London, HR Wallingford	Shanghai Climate Change Research Centre, HR Wallingford China	Shanghai Municipal Development and Reform Commission	Developing engineering options for mitigating future compound flooding risks in shanghai by transferring the expertise of UK TE2100
Cardiff University, University of Cambridge, Mott MacDonald Ltd	Hohai University, Ningbo Hydraulic Waterpower Planning and Designing Research Institution	Ningbo Municipal Water Conservancy Bureau	Dynamic assessment and intelligent tracking of coastal city flood risk
Newcastle University, Environmental Measurements Ltd	Nanjing Hydraulic Research Institute, Beijing Golden-Water YanyuSci&Tech Co Ltd	Shenzhen Water Affairs Bureau, Huizhou Hydrographic Bureau	A virtual collaboratory for flood forecasting, flood warning and decision-making under uncertainty in urban flood management
Centre for Ecology & Hydrology, Wallingford HydroSolutions, Fathom	Changjiang River Scientific Research Institute, Beijing Sinfotek Technology Co, Ltd	Wuhan Water Affairs Bureau	Enhancing China-UK technical co-operation, knowledge sharing, and business opportunities in urban flood management and intelligent urban water network monitoring

DISTINGUISHED VISITING FELLOWSHIPS AND MISSIONS IN TURKEY

The Distinguished Visiting Fellowships and Missions in Turkey programme is a component of the UK Newton Fund, which aims to develop science and innovation partnerships to promote the economic development and social welfare of developing countries. The scheme provides funding so that an engineering department at a Turkish university can host a Distinguished Visitor or group of Distinguished Visitors from a UK academic centre of excellence for a visit lasting up to one month.

Award holder	Distinguished Visitor	Area of collaboration
Dr Yasanur Kayikci, Turkish-German University	Dr Nachiappan Subramanian, University of Sussex; Dr Manoj Dora, Brunel University; Professor Kulwant Pawar, University of Nottingham; Professor Samir Dani, University of Huddersfield; Dr Mukesh Kumar, University of Cambridge; Professor Michael Bourlakis, Cranfield School of Management; Professor Vikas Kumar, University of the West of England	Perishable food cold chain logistics in Turkey
Professor Ilker Fatih Kara, Mersin University	Professor Ashraf Ashour, University of Bradford	FRP composites for durable infrastructures in Turkey
Dr Tacha Serif, Yeditepe University	Professor George Ghinea, Brunel University London	3D software mapping for osteoarthritis pain self-management in older population
Professor Kadriye Tuzlakoglu, Yalova University	Dr Helena Azevedo, Queen Mary University of London	Molecularly engineered biomaterials for the treatment of diabetic wounds
Dr Ozlem Bicen Unluer, Anadolu University	Dr Gyorgy Szekely, University of Manchester	Clean water via nanomaterials-enabled sustainable purification

DISTINGUISHED VISITING FELLOWSHIPS

The Distinguished Visiting Fellowship scheme provides funding for an engineering department in a UK university to host a senior academic from an overseas academic centre of excellence for up to a month. The scheme promotes sharing of the latest developments and allows the participating organisations to discover common and complementary skills and initiatives that could lead to future collaborations.

Award holder	Distinguished Visitor	Area of collaboration
Professor Sondipon Adhikari, Swansea University	Professor Ranjan Ganguli, Indian Institute of Science	Uncertainty quantification of helicopter aeroelastic stability using deep learning
Dr Ayman Bakry Attya, University of Huddersfield	Dr Jose Luis Dominguez-Garcia, Catalonia institute for energy research	Renewable power plants and novel grid dynamics: control, integration and impacts
Dr Yun Bai, University College London	Professor Surendra P Shah, Northwestern University	Enhancing the properties of low-carbon cementitious materials with nano-materials
Professor Chris Bowen, University of Bath	Dr Vijay Kumar Srivastava, Indian Institute of Technology	Piezoelectric sensor using graphene nano-platelet filled carbon fibre dielectric elastomers
Dr Stephen Coupe, Coventry University	Professor William Hunt, North Carolina State University	A task force for improving water management in drought affected Cape Verde
Dr Colm Durkan, University of Cambridge	Professor Jessica Krogstad, University of Illinois at Urbana-Champaign	A collaborative approach to characterisation of advanced surfaces: probing functionality, chemistry and microstructure
Professor Massimiliano Gei, Cardiff University	Professor Luis Dorfmann, Tufts University	Bioactuation in soft robotics
Professor Yakun Guo, Bradford University	Professor Dong-Sheng Jeng, Griffith University	Investigation of wave-induced dynamic seabed response and liquefaction around a mono-pile foundation
Dr Hadi Hedari, University of Glasgow	Professor Mehrorang Ghaedi, Yasouj University	Ultrasensitive electrochemical sensors for simultaneous determination of gallic acid and uric acid in human urine and fruit juices
Dr Zushu Li, University of Warwick	Professor Geoffrey Brooks, Swinburne University of Technology	Future development for sustainable steel manufacturing
Professor Geyong Min, University of Exeter	Professor Tarek El-Ghazawi, The George Washington University	Data-driven computer modelling and task scheduling for high-performance computing
Professor Michael Reece, Queen Mary University of London	Professor Junyou Yang, Huazhong University of Science and Technology	Fabrication and thermoelectric properties of SnTe-based thermoelectric materials
Professor Wenmiao Shu, University of Strathclyde	Professor Wei Sun, Drexel University	Biofabrication for future healthcare
Professor Sarah Spurgeon, University College London	Professor Ian Peterson, Australian National University	Exploring recent advances in quantum control theory
Dr Kezhi Wang, Northumbria University	Professor Wei Xu, National Mobile Communications Research Lab	MEC based MmWave MIMO revolution to 5G/B5G applications
Gabrielle Orbaek White, Swansea University	Professor Juan Lucena, Colorado School of Mines	Transforming engineering education

Award holder	Distinguished Visitor	Area of collaboration
Dr Hongwei Wu, University of Hertfordshire	Professor Xiaoze Du, North China Electric Power University	Heat transfer fluid for high efficient solar energy utilisation: molecular dynamic approach and experimental study
Professor Haito Ye, University of Leicester	Professor Changzhi Gu, Chinese Academy of Science	Metamaterials perfect absorber based on phase-change materials
Dr Yuqing Zhang, Aston University	Professor Randy West, Auburn University	Multiple-component binder system design for 100% recycling of reclaimed asphalt pavement

AFRICA PRIZE FOR ENGINEERING INNOVATION

The Africa Prize for Engineering Innovation aims to stimulate, celebrate and reward innovation and entrepreneurship in sub-Saharan Africa. A shortlist of 16 innovators is selected to receive eight months of remote and in-person business and commercialisation training, mentoring and support. Following the training, four finalists are selected and invited to pitch at a final event in Africa, where a winner is chosen; all four finalists receive cash prizes.

Name	Innovation	Country
2018 winner		
Brian Gitta	Matibabu	Uganda
2018 finalists		
Michael Asante-Afrifa	Science Set	Ghana
Ugochukwu Ifediora	iMeter	Nigeria
Collins Saguru	AltMet	South Africa
2019 shortlist		
Roy Allela	Sign-IO	Kenya
Chukwunonso Arinze	KAOSHI	Nigeria
Kenneth Guantai	Elo-cart	Kenya
Neo Hutiri	Pelebox Smart Lockers	South Africa
Dr Obi Igbokwe	WellNewMe	Nigeria
George Kimani	Smart Brooder	Kenya
Beth Koigi	Majik Water	Kenya
Elizabeth Kperrun	Zenafri	Nigeria
Paul Matovu	The Vertical Farm	Uganda
Muzalema Mwanza	Baby Delivery Kits	Zambia
Safiatou Nana	SolarKoodo	Burkina Faso
James Ochuka	JuakaliSmart	Kenya
Collince Oluoch	Chanjoplus	Kenya
Dr Lukas du Plessis	Protea Machine Tools	South Africa
Anne K Rweyora	Smart Havens Africa	Uganda
Professor Dele Sanni	3-D-3-P Industrial Dryer	Nigeria

FRONTIERS OF DEVELOPMENT

This scheme supports new interdisciplinary collaborative pilot projects between groups of two or more attendees of the Frontiers of Development symposia. This programme is run by the Academy in partnership with the Royal Society, the British Academy and the Academy of Medical Sciences.

Tranche 1 - Inclusivity and wellbeing: coastal communities in a 3°C world

Names	Institutions	Project title
Olalekan Adekola Margaret Gatonye Bart Malaba Paul Orina	York St John University Aquaculture Association of Kenya Larive International Kenya Marine and Fisheries Research Institute	Promoting climate-resilient aquaculture through shared space for co-designing adaptation measures
Lai Bun Lok Xiaogang Shi Diego Almendrades	Lancaster University University of Glasgow Ecoswell	Geophysical investigations of groundwater for rural community-use in Lobitos, Peru
Zhugen Yang Mojisola Owoseni	Cranfield University Federal University Lafia	Low-cost sensors for monitoring drinking water in Nigeria
Md Jahir Rizvi Margaret Oguguah Ngozi	University of Plymouth Nigerian Institute for Oceanography and Marine Research	Sustainable ship breaking process for cleaner environment and better wellbeing
Olalekan Adekola Mohammad Rafiqul Islam	York St John University Bangladesh University of Engineering Technology	
Francis Pope William Avis Michael Gatari Vera Bukachi Mark Pelling	University of Birmingham University of Birmingham University of Nairobi Kounkuey Design Initiative King's College London	Community led air quality monitoring in a Kenyan informal development
Alexandre Gagnon Bui Quang Thanh Witiya Pittungnapoo	Liverpool John Moores University VNU University of Science Naresuan University	Resilience of cultural heritage to climate change in Southeast Asia

INGENIOUS PUBLIC ENGAGEMENT AWARDS

Round 13 Awards

Ingenious provides funding for projects that enable engineers to enhance their public engagement skills, and raise awareness of the diversity, nature and impact of engineering.

Awardee	Organisation	Project title
Jess Boyle	Déda	STEAM - Bringing engineering to life with the arts
Alison Duffy	Abertay University	Building school raingardens - growing future engineers for greener built environments
Leanne Earle	St Bede Primary Academy	Future engineers
Wyn Griffiths	SMASHfest UK	Space plague - immersive engineering experience
Alexandra Guardado	University of Manchester	Engineering the human body
Deborah Harris	Women's Engineering Society (WES)	An interactive engineering exhibition of WES violets
Francis Hassard	Cranfield University	Escape the classroom: contamination busters
David Hill	University of Portsmouth	A million dreams for the world we're gonna make
Georgios Karakonstantis	Queen's University of Belfast	'Get-Smarter' re-inventing the world with Internet of Things
Joy Leckie	University of Strathclyde	Young chemical ambassadors - diverse engineers of the future
Hannah Marubbi	Techniquest Glyndwr	11 mile journey - discovering north Wales' amazing engineering
Alistair McConnell	The University of Edinburgh	Robosense: sensing your environment with robots
Deborah McNeill	University of Glasgow	The Ingenious circus
Catherine Orbach	Culture Shift CIC	Your town: transformations by young people and engineers
Steven Owens	Glasgow Science Centre	Ingenious on tour
Elizabeth Parsons	Wigan STEAM CIC	Engineering hack camp - inspiring the engineers of the future
Ed Patrick	Kid Carpet	Epic fail
Sunday Popo-Ola	Imperial College London	Ingenious creative futures: empowering engineering outreach
Antonio Portas	NUSTEM, Northumbria University	Tales of engineering
Daniel Roberts	Bangor University	Photo-electric light orchestra
Anna Rutherford	The Architecture Centre	Bristol open doors engineering futures
Anita Shervington	Blast Fest Ltd	BLAST Fest Caribbean sound SySTEM project
Pigalle Tavakkoli	Guerilla Science	City survival
Gregory Watson	Children's Radio UK Ltd	Are we there yet?
Irene Wise	Lancaster University	Engineer! What's your story?
Hayley Wyatt	Cardiff University	Empowering engineers

ENGINEERING LEADERS SCHOLARSHIPS

This award funds ambitious engineering undergraduates to undertake an accelerated personal development programme to move into a leadership position soon after graduation. The Academy currently funds 108 awardees, which included three awardees who are also recipient of the Sir Ralph Robins Scholarship. The Sir Ralph Robins Scholarship is awarded to three individuals each year who meet all of the criteria for an Engineering Leaders Scholarship and also come from an underprivileged or underrepresented background.

Name	University	Subject
Sushant Achawal	University of Cambridge	Engineering
Aminah Ahmad	University of Aberdeen	Chemical engineering
Akhil Ahmed	University of Strathclyde	Chemical and process engineering
Oluwatofunmi Akintaro	University of Sheffield	Civil and structural engineering
Lucia Albelda Gimeno	University College London	Biomedical engineering
Anam Balbolia	Imperial College London	Civil engineering
Abigael Bamgboye	Imperial College London	Materials science and engineering
Esli Belshi	University of Strathclyde	Electrical and mechanical engineering
Charlotte Bryant	Aston University	Chemical engineering
Liam Bushrod	Durham University	Engineering
Judith Cameron	Queen's University Belfast	Mechanical engineering
Billy Cavanagh	University of Surrey	Mechanical engineering
Kai Chelliah	University of Bristol	Engineering design
Jamie Clark	University of Edinburgh	Civil engineering
Felix Cox	Queen Mary, University of London	Mechanical engineering
Isabella Curtis	University of Warwick	Engineering
Matthew Curtis	University of Bristol	Engineering design
Olivia Daniel	University of Bristol	Engineering design
Alina Dragancea	University of Bristol	Civil engineering
Maisie Edwards-Mowforth	University of Edinburgh	Mechanical engineering
Tirion Evans	University of Edinburgh	Mechanical engineering
Rachael Eynon	University of Strathclyde	Electronic and electrical engineering
Luke Falzon	University of Dundee	Civil engineering
Leena Farhat	Aberystwyth University	Computer science
Umar Farooq*	Newcastle University	Automation and control engineering
Federica Freddi	University of Cambridge	Engineering
Adrian Gallet	University of Sheffield	Civil and structural engineering
Miroslav Gasperek	Imperial College London	Biomedical engineering
Joseph Gibson	University of Strathclyde	Electronic and electrical engineering
Julia Gimbernat	Imperial College London	Biomedical engineering
Alexander Gleed	University of Surrey	Medical engineering
Thomas Gonda	Imperial College London	Design engineering

Name	University	Subject
Layla Graham*	Sheffield Hallam University	Electronic engineering
Shannon Graham	Queen's University Belfast	Product design engineering
Dylan Hall	Imperial College London	Materials science and engineering
Edward Hanton	University of Bristol	Engineering design
Joanna Hartnell	University of Surrey	Civil engineering
Akil Hashmi	University of Cambridge	Information engineering
Tahir Hassuji	University of Bath	Mechanical engineering
Rachel Hayden	University of Bath	Civil engineering
Thomas Henderson Edwards	University of Southampton	Civil engineering
Michael Hofmann	Imperial College London	Design engineering
Philip Holker	London South Bank University	Mechanical engineering
Esme Hotston Moore	Imperial College London	Aeronautical engineering
Jodie Howlett	Sheffield Hallam University	Mechanical engineering
Cameron Huggins	University of Surrey	Medical engineering
George Imafidon	University College London	Mechanical engineering
Helen Inman	University of Bristol	Engineering design
Zakaria Jama	Oxford University	Engineering science
Frances James	University of Bristol	Engineering design
Shahidurahman Janatmir	University College London	Chemical engineering
Emma Johnston	University of Strathclyde	Aero-mechanical engineering
Vidya Kanakarathnam	University of Cambridge	Engineering
Rachael Ker	University of Surrey	Mechanical engineering
David Kong	University of Edinburgh	Electronics and electrical engineering
James Lamyman	University of Southampton	Ship science with small craft
Anastasia Laurie	University College London	Mechanical engineering
Jonathan Loudon	Queen's University Belfast	Mechanical engineering
Topaz Maitland	University of Bristol	Engineering design
Ella Maule	University of Edinburgh	Mechanical engineering
Joseph McFarlane	University of Bristol	Engineering design
Naomi McGregor	Queen's University Belfast	Product design engineering
Marnie McKay	University of Strathclyde	Electrical and mechanical engineering
James McKevitt	Loughborough University	Aeronautical engineering
Kyle McLean	University of Sheffield	Civil and structural engineering
Jade McMorland	University of Strathclyde	Electronic and electrical engineering
Emma McQuiggan	Queen's University Belfast	Mechanical engineering
Bruno Mlodozienec	University of Cambridge	Engineering
Alexander Mulroy	University of Bristol	Engineering design
Sophie Myers	University of Bristol	Engineering design
Victoria Neill	Heriot-Watt University	Chemical engineering

Name	University	Subject
Hanesh Patel	University of Cambridge	Engineering
Munira Patel	Newcastle University	Chemical engineering
Nicolaas Pickard	University of Birmingham	Mechanical engineering
Matthew Price	University of Southampton	Electronic engineering
Marcia Pryce	Newcastle University	Chemical engineering
Alice Quinn	Loughborough University	Innovative manufacturing engineering
Ryan Rafferty	Queen's University Belfast	Mechanical engineering
Alexander Reeve	University of Bristol	Engineering design
Victoria Regan	University of Bath	Chemical engineering
Daniel Rodrigues	University of Bristol	Engineering design
Lisa Rossi	University of Aberdeen	Chemical engineering
Amy Ruffley	University of Bristol	Engineering design
Jonathan Saad	University of Warwick	Engineering
Ilham Said	University of Bristol	Aerospace engineering
Thomas Santini	University of Bath	Integrated design engineering
Roberto Sesia	Cardiff University	Electrical and electronic engineering
Peter Simmons	University of Bristol	Engineering design
Samuel Shannon	University College London	Biochemical engineering
Agata Skoneczna	University of Edinburgh	Structural engineering with architecture
Matthew Smith	University of Sheffield	Materials science and engineering
Michal Stepkiewicz	University of Sheffield	Mechanical engineering
Patrick Sullivan	University of Bristol	Engineering design
Elvis Tinago	University of the West of England	Aerospace engineering
Duncan Trenholm	University of Nottingham	Civil engineering
Jack Trevail	University of Bristol	Engineering design
Emily Turnbull	Loughborough University	Civil engineering
Matthew Uren*	University of Manchester	Aerospace engineering
Enrico Varano	University of Bristol	Engineering design
Matthew Walker	Loughborough University	Chemical engineering
Liam Warnock	University of Strathclyde	Electronic and electrical engineering
Calum Watkins	University of Strathclyde	Electrical and mechanical engineering
Nathan Whear	University of Edinburgh	Mechanical engineering
Bethan Wilkinson	University of Edinburgh	Civil engineering
Rhys Williams	Imperial College London	Aeronautical engineering
Katherine Winfield	University of Nottingham	Civil engineering
Paul Yuile	University of Strathclyde	Electrical and mechanical engineering

*Sir Ralph Robins Scholars

VISITING PROFESSORS

The Visiting Professor programme places practising engineers into UK universities for three years to enhance the teaching and learning, as well as employability and skills, of undergraduate engineering students. The programme currently supports 78 Visiting Professor roles at 43 universities. The list below includes all Visiting Professors for the 2018/19 academic year.

Name	University
Steven Adams and Sam Beale	University of Cambridge
Salim Akhtar	University of Bradford
Ruth Allen	University of Exeter
Anthony Banford	University of Manchester
Dawn Bonfield MBE	Aston University
Oliver Broadbent	Imperial College London
Shahana Buchanan	University College London
Dawn Childs	Kingston University London
Caspar Clark	University of the West of Scotland
Patrick Conaghan	Heriot-Watt University
Dr David Cooper	Liverpool John Moores University
Colin Cunningham	University of Edinburgh
Dr Shidhartha Das	Newcastle University
Dr Paul Davies	Liverpool John Moores University
Robert Deaves	Imperial College London
Peter Debney	University of Bradford
Colin Deddis	University of Strathclyde
Dr Allen J Edwards	Cardiff University
John Eldridge	University of Liverpool
Gordon Findlay	Brunel University London
Ian Firth FREng	University of Warwick
Dr Tim Fox	University of Exeter
Steve Franklin	University of Sheffield
Dr Pierre Gauthier	Cranfield University
Vincent Glancy	Brunel University London
Martin Goosey	Loughborough University
Dr John Harris	University College London
Robert Harris	University of Southampton
Dr Christopher Harrison	University of the West of England
Dr Peter Harrod	Imperial College London
Dr Thoralf Hartwig	University College London
Dr Nicholas John Hazel	University College London
Dr Brian Henderson	University of Central Lancashire
Gillian Horn	University of Reading
Robert Ian Hutchison	University College London
Andrew Jackson	University of Sheffield

Name	University
Dr Penny Jeffcoate	University of Southampton
Steve Kaye	Brunel University London
Dr Mark Keene	University of Birmingham
Gregory Kelsall	University of Sheffield
Andrew Bryan Langridge	University of Bath
Malcolm Lees	King's College London
Jochen Leidner	University of Sheffield
Zygmunt Adam Lubkowski	University College London
Dr Jon Machtynger	University of Surrey
Don McQuillan	Queen's University Belfast
Anthony (Tony) Morgan	University of Leeds
Gary Morgan	University of York
Dr Raj Nangia	University of the West of England
Stephen Newbury	University of Oxford
Dr Nelson Ogunshakin OBE	Aston University
Sir John O'Reilly FREng FLSW	University of Huddersfield
Brian Palmer	University of Manchester
Dr Vili Panov	University of Lincoln
Dr Richard Pearson	Brunel University London
Dr Jan Peters	Open University
Xavier Poteau	University of Manchester
Dr Honor Powrie	University of Southampton
Atul Roy	University of Kent
Dr Tony Russell-Rose	University of Essex
Robert (Bob) William Shanks	Coventry University
Graeme Shaw	University of Southampton
Dr Andrew Sherlock	University of Edinburgh
Martin Simpson	University of Liverpool
Dr Uwe Stein	University of Edinburgh
Kevin Steptoe	University of York
Dr Paul Taylor	University of the West of England
Vaughan Thomas	University College London
Professor K Clive Thompson	University of East London
Paul Tymkow	Brunel University London
Dr Tao Wang	University of Kent
Mr Mike Westlake	University of Warwick
Dr Stewart White	University of Glasgow
Dr Stuart Wicks	Loughborough University
Dr David Williams	Loughborough University
Chris Winter	University of Plymouth
Teo Heng Jimmy Yang	Cardiff University
James Yu	University of Glasgow

SAINSBURY MANAGEMENT FELLOWSHIPS

This scheme aims to enhance the capability of the UK engineering industry by providing grants to young engineers with leadership qualities so that they can undertake an MBA course at a leading international business school. Last year, 11 fellowships were awarded.

Name	Business school
Jad Abi Esber	Harvard Business School
Rachel Fitzsimmons	INSEAD
Emmanuel Lawal	INSEAD
Pablo Lopez Bouzas	INSEAD
Jacob Mills	London Business School
Abhishek Morey	INSEAD
Meenal Pore	INSEAD
Jonathon Simister	London Business School
Jegadeesh Sithamparathas	MIT Sloan School of Management
Samir Szamocki	INSEAD
Ian Taylor	Stanford Graduate School of Business

CONNECTING STEM TEACHERS PROGRAMME

Connecting STEM Teachers is the Academy's flagship schools programme delivered by 41 teacher coordinators across 42 regional networks. Teacher coordinators connect teachers across STEM subjects by promoting and facilitating cross-curricular working and collaboration, provide continued professional development to teachers via a "train-the-trainer" model and deliver high-quality, curriculum-linked physical classroom resources which connects STEM in the classroom to engineering in the real-world.

Teacher coordinator	Area covered
Scott Atkinson	South East - Hampshire/West Sussex
Annie Beglin	South - Surrey/Berkshire
Jorden Birch	North East - Sheffield, South Yorkshire
Barney Brown	South West - Bath, Somerset
Simon Brown	South - Oxfordshire/Buckinghamshire
Andrew Carruthers	North - Leeds, West Yorkshire
Claudia Clarke	South - Oxfordshire
Tom Cookson	Midlands - Nottingham
Amanda Courtney	South East - Kent/East Sussex
Michael Cronk	South West - Devon
Richard Davies	North East - North Yorkshire
Lorraine Drybrough	South West - Cornwall
Kate Finlay	East of England - Norfolk

Teacher coordinator	Area covered
Andrew Gilbert	West Midlands - Shropshire
Robin Gray	Scotland - Aberdeenshire
Emma Harvey	South East - Kent
Arthur Harwood	East Midlands - Northamptonshire
Stuart Higham	South - Hertfordshire
Thomas Lavery	Northern Ireland - Belfast
Sam Lawrence	South West - Bristol
Holly Leat	South - Southampton
Beverly Maloney	East of England - Ipswich
Lewis Matheson	South West - Bath, Somerset
Michael McAteer	North West - Liverpool
Yeasmin Mortuza	London - North East
Michael Nelson	North East - Newcastle upon Tyne
Emily Northwood	West Midlands - Stoke on Trent, Staffordshire
Tracey O'Connor	West Midlands - Birmingham
Tunde Orelaja	London - South East
Krissi Pink	South East - Medway Towns
Susan Quirk	South West Wales - Carmarthenshire
Martin Reid	Scotland - Perth and Kinross
Gareth Richards	East Midlands - Peterborough, Cambridgeshire
Gaynor Sharp	West Midlands - Coventry
Martin Simmons	North West - Greater Manchester
Philip Sutton	North Wales - Conwy
David Thomas	North East - Northumberland
Matthew Thomas	North West - Blackpool
Peter Thomas	South East Wales - Cardiff
Anthony Vaughan-Evans	East of England - Lowestoft, Suffolk
Chris Wallis	North West - Preston, Lancashire
Laura Watford	South - Portsmouth
Terry Watts	South West - Bristol

Queen Elizabeth Prize for Engineering

The Queen Elizabeth Prize for Engineering (QEPrize) is a global award that celebrates outstanding innovations in engineering that have created significant benefit to humanity. The £1 million prize is awarded to an individual or team of people, of any nationality, directly responsible for a groundbreaking advance in engineering.

PANEL OF JUDGES

The distinguished, international panel of judges is comprised of leading engineers and scientists from all corners of the profession. Each cycle they work to reward the engineers responsible for a groundbreaking advance in engineering that has created significant international public benefit.

The judging panel is chaired by Professor Sir Christopher Snowden FREng FRS.

Name	Job title	Country
Professor Sir Christopher Snowden FREng FRS	Chair of Judges Vice-Chancellor, University of Southampton	UK
Professor Jim Al-Khalili	Professor of Physics and Professor of Public Engagement in Science, University of Surrey	UK
Professor Mary Boyce	Dean of Engineering, The Fu Foundation School of Engineering and Applied Science, Columbia University	USA
Dr Jean-Lou Chameau	President, King Abdullah University of Science and Technology	Saudi Arabia
Professor Lynn Gladden CBE FREng FRS	Pro-Vice-Chancellor for Research, Shell Professor of Chemical Engineering, University of Cambridge	UK
Professor Carlos Henrique de Brito Cruz	Science Director, São Paulo Research Foundation	Brazil
Professor Dr Dr hc Reinhard Huettl	Past President, German National Academy of Science and Engineering	Germany
Professor Hiroshi Komiyama	President, Engineering Academy Japan	Japan
Professor Jinghai Li	Vice-President, Chinese Academy of Sciences	China
Ilya Marotta	Executive Vice-President for Engineering, Panama Canal Authority	Panama
Dr Raghunath Mashelkar	National Research Professor, Chairman of the National Innovation Foundation and President of Global Research Alliance	India
Dr Dan Mote Jr	President, US National Academy of Engineering; Regents Professor, University of Maryland	USA
Professor Dr Dr hc Viola Vogel	Head of Laboratory of Applied Mechanobiology, ETH Zurich	Switzerland
Paul Westbury CBE FREng	Group Technical Director, Laing O'Rourke	UK
Dr Henry Yang	Professor of Mechanical Engineering and Chancellor, University of California, Santa Barbara	USA

FOUNDATION TRUSTEES

The Queen Elizabeth Prize for Engineering is run by a charitable company limited by guarantee and called The Queen Elizabeth Prize Foundation, which manages the prize and its funding.

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SEARCH GROUP

The search group encourages submissions from around the world, enabling members of the public, academics and those working in industry to bring innovations and potential recipients of the prize to the attention of the judging panel. They work to produce a pool of nominations that is inclusive and representative.

The search group is chaired by Professor Stephen Williamson FREng.

Name	Job title	
Professor Stephen Williamson FREng	Chair of Search Group Emeritus Professor, University of Surrey	UK
Professor Neil Alford FREng	Associate Provost (Academic Planning), Imperial College London	UK
Professor Adisa Azapagic FREng	Professor of Sustainable Chemical Engineering and Head of Sustainable Industrial Systems, University of Manchester	UK
Professor John Clarkson FREng	Professor of Engineering Design, University of Cambridge	UK
Professor Roger Falconer FREng	Professor of Water Management, Cardiff University	UK
Dr Martin Grant FREng	Chief Executive Officer - Energy, WS Atkins	UK
Professor Guy Houlby FREng	Professor of Civil Engineering and former Head of the Department of Engineering Science, University of Oxford	UK
Professor Joe McGeehan CBE FREng	Emeritus Professor of Communications Engineering, University of Bristol	UK
Professor Philip Nelson FREng	Chief Executive, Engineering and Physical Sciences Research Council; Professor of Acoustics, University of Southampton	UK
Professor Alison Noble OBE FREng	Technikos Professor of Biomedical Engineering and Director of Institute of Biomedical Engineering, University of Oxford	UK
Professor Ric Parker CBE FREng	Former Director of Research and Technology, Rolls-Royce (until April 2016)	UK
Professor Richard Penty FREng	Professor of Photonics, University of Cambridge; Master, Sidney Sussex College	UK
Professor Duc Pham OBE FREng FLSW	Chance Professor of Engineering and Director of Research, University of Birmingham	UK

Development and fundraising

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*Legacy gift

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The Academy would like to thank the following individual donors to this year's Annual Fund, which raised a total of £38,000.

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With additional thanks to those Fellows who make regular monthly donations towards the Academy's activities.

SIR RALPH ROBINS SCHOLARSHIP FUND

Named for Sir Ralph Robins CBE DL, former Chairman of Rolls-Royce plc and one of the UK's most distinguished industrialists, the Sir Ralph Robins Engineering Scholarship will provide scholarships to young engineers who have displayed significant potential. Candidates from underrepresented and disadvantaged backgrounds will be particularly encouraged to apply. Our thanks to Rolls-Royce and all those who have contributed to the fund:

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