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The Bragg Centre for Materials Research

2025/26 News and Highlights

A year of connecting the
materials community
and delivering research
and innovation that
benefits society.

theBRAGGcentre
FOR MATERIALS RESEARCH

HENRY
ROYCE
INSTITUTE



UK Research
and Innovation



Professor Edmund Linfield
Director, Bragg Centre for Materials Research

Photo: Mark Bickerdike

A year of momentum

It's been another exciting year for materials research and innovation, with advanced materials named in the UK's Modern Industrial Strategy 2025 and the publication of the UK's National Materials Innovation Strategy.

It's fantastic to see how well our work at the Bragg Centre fits these ambitions.

We support the UK's National Semiconductor Strategy, and this year we launched the EPSRC Centre for Doctoral Training (CDT) in UK Semiconductor Industry Future Skills (UK-SIFS) with Swansea University, a major national initiative to address the UK's semiconductor skills gap. This CDT complements our existing proposition, including the Royce Practical Cleanroom Skills Training and Undergraduate Internship Scheme, which are tackling the shortage of skilled workers threatening the UK semiconductor industry's ability to innovate and compete in a rapidly evolving global market.

We're always keen to strengthen our regional and national links and, this year, welcomed a number of high-profile visitors to the Centre, including colleagues from the West Yorkshire Combined Authority (WYCA), the Department for Science, Innovation and Technology (DSIT) and the Engineering and Physical Sciences Research Council (EPSRC).

We hosted a group from South Korea as part of a national tour organised by DSIT, discussing semiconductor

innovation and advanced characterisation. We also welcomed delegates from the UK-India Advanced Manufacturing Trade Mission 2025, hosted by the Department for Business and Trade and WYCA, which has already led to inward investment in the region.

Bragg continues to be a place where the Leeds materials community convenes, for example at our flagship conference, the Bragg Exchange, which we hosted once again in January, with more than 250 delegates including representatives from DSIT, EPSRC, the Henry Royce Institute and WYCA. It has also been a pleasure to see our industrial partnerships growing, including community members leading and supporting an increasing number of Royce Industrial Collaboration Programme projects.

In other news, we've been delighted to welcome our new Centre Manager, **Dr Claire Savy** and Communications and Engagement Officer, **Faye Knowles** to our team. We also launched our brand-new website in May, which is where you can find our latest news and updates. Please do take a look and encourage all your colleagues to become members!



Photo: Justin Slee

Engineering biology in collaboration with King's College London

Our community is delivering a new doctoral training programme as part of the Biotechnology and Biological Sciences Research Council's (BBSRC) Doctoral Focal Awards.

Led by King's College London, Engineering Biology for Biomedicine (EB4BM) is a UK Research and Innovation initiative supporting studentships in engineering biology. The programme aims to facilitate the application of systematic design principles to biological systems,

creating programmable molecules, cells and materials that can transform medicine.

Over the next seven years, the programme will deliver three annual intakes of PhD students, with 18 UKRI-funded studentships and additional opportunities from King's, Leeds and the National Physical Laboratory, with the aim of expanding to over 40 students through industrial co-funding. The programme was selected to

Engineering biology is redefining what is possible in medicine, and we are delighted to join forces with King's and NPL on this pioneering interdisciplinary PhD programme.

Professor Bruce Turnbull,
Co-director, EB4BM

receive UK government TechExpert funding, which boosts UK student stipends by £10,000 per year.

EB4BM is part of the Engineering Biology Network at Leeds.



Developing semiconductor industry skills

We launched the EPSRC Centre for Doctoral Training (CDT) in Semiconductor Skills with Swansea University in January 2026, a major national initiative to address the UK's semiconductor skills gap.

Led by Swansea's Centre for Integrative Semiconductor Materials, the UK Semiconductor Industry Future Skills (UK-SIFS) CDT is backed by the UK Government's Department for Science, Innovation and Technology (DSIT), as part of its Modern Industrial Strategy.

The CDT will deliver advanced doctoral-level training in semiconductor skills that are critical to the UK's ambitions for a resilient and competitive semiconductor manufacturing sector. UK-SIFS will produce a pipeline of up to 60 highly skilled PhD students over five cohorts from October 2026. It represents a joint investment of approximately £18m from UK Research and Innovation and the EPSRC.

IVFmicro secures £3.5m to advance IVF technology



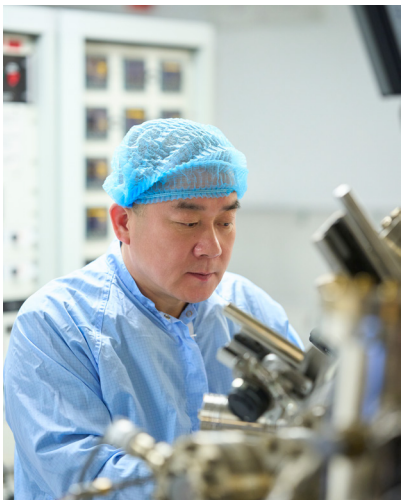
Dr Virginia Pensabene

In December, the University of Leeds spinout IVFmicro received a £3.5m investment that will improve outcomes for patients undergoing fertility treatment.

The company was co-founded in 2018 by Bragg Centre member, **Dr Virginia Pensabene** and her colleague **Professor Helen Picton**. The pair have developed a microfluidic device that enhances the quality and number of embryos in an IVF treatment cycle.

The pre-seed funding is led by Northern Gritstone, an investment company dedicated to supporting ambitious science and technology businesses in the North of England, with support from Innovate UK’s Investor Partnerships Programme. The funding will be used by IVFmicro for its next verification and validation phase, leading to trials on human embryos in fertility clinics.

Programme Grant enables materials engineering for critical technologies



Dr Lianhe Li in the Terahertz Laboratory

Photo: Justin Slee

Bragg members from Electronic and Electrical Engineering, Physics and Astronomy and Chemical and Process Engineering were awarded the EPSRC Programme Grant for Materials Engineering for Advanced Devices of more than £10m.

Led by the University of Manchester, in partnership with Imperial College London, the vision is to engineer materials on the ultimate atomic scale focusing on photonic and quantum technologies.



Hellos & Goodbyes

This year, we welcomed:

Dr Claire Savy as our new Centre Manager in September

Faye Knowles as Communications and Engagement Officer in October

Atreya Danturthi as a Technical Specialist in Plasma Vapour Deposition in our Advanced Coatings System and the Environmental Tribology Suite

We said goodbye to:

Senior Experimental Officer and Facility Manager, **John Harrington**, who retired from our Leeds Electron Microscopy and Spectroscopy Facility in July. John has made a significant contribution during his 42 years with the University and will be sorely missed.

Senior Experimental Officer, **Rob Farr**. An integral part of the Leeds Nanotechnology Cleanroom team, Rob led projects including our school outreach programme and industry training.

Industrial Collaboration Programme projects tackle national challenges

In May 2026, we secured more than £300,000 funding from round six of the Henry Royce Institute’s Industrial Collaboration Programme (ICP) to support Bragg Centre members in delivering projects that address national advanced materials challenges.

Enabling collaboration between industry and academia, Royce’s ICP offers grant funding for research, development and innovation sprint projects, aligned with National Materials Innovation Strategy Opportunity Themes.

Professor Theodore Hanein, Dr Hisham Hafez and colleagues from the School of Civil Engineering are set to collaborate with the Mineral Products Association to explore low-carbon cement technologies for concrete repair. The project will create BS EN 1504 compliant cements based on calcined clay and sulfoaluminate cements for repair applications.

Dr Yuvaraj Dhandapani from the Institute of Functional Surfaces is leading a project with industry partner, Arup. Dr Dhandapani and the team will examine carbonation resilience and dimensional stability of Limestone Calcined Clay Cement (LC3) concrete under changing climate conditions, supporting the UK’s transition to net-zero construction and more climate-resilient infrastructure.

Dr Chris Wood from the Leeds Nanotechnology Cleanroom is co-leading a project in partnership with clean tech company, Infiniflux. The team is set to evaluate the effectiveness of advanced cooling architectures to enhance semiconductor device efficiency for next generation electronics.

Professor Richard Barker is collaborating with the National Physical Laboratory and Spirit Energy on a project to develop a corrosion test method for impurity-containing gas-phase CO² pipelines.

This academic year also saw the culmination of a key ICP project funded in round five. **Professor Ardian Morina, Dr Liuquan Yang, Dr Junfeng Yang, Dr Chun Wang and Dr Aladdin Al Sheikh Omar** from the University of Leeds partnered with colleagues from Cranfield University and Rolls-Royce to develop and deploy a wear testing facility for assessing the reliability and durability of coated tribological interfaces that operate in high-pressure hydrogen conditions.

This project is an important step towards developing next-generation, low-wear components for hydrogen technologies.



Photo: Jill Jennings

National cleanroom training course enters fourth year

Our team helped deliver the Practical Cleanroom Skills training for the fourth year in January, in partnership with the University of Cambridge and Swansea University.

Funded by the Henry Royce Institute, the programme offers hands-on experience in ultra-clean processing environments essential for semiconductor manufacturing.

This year’s training took place at the University of Cambridge, with sessions from a range of experts from academia and industry, including our own **Dr Mark Rosamond** and **Rob Farr** from the Leeds Nanotechnology Cleanroom, and guest speakers from CS Connected. Twenty-three participants attended the course, including PhD students and industry engineers.

The course returns to the Leeds Nanotechnology Cleanroom in January 2027.

Inspiring the next generation of materials researchers



Our community is working to engage young people in materials research and encourage them to pursue a career in the field.

Members from our Materials Characterisation research theme hosted a series of events as part of Discover Materials, a collaboration between a group of UK universities, the Henry Royce Institute and the wider materials community. The activities involved numerous students, researchers, academics and experimental specialists from across the University and engaged more than 900 people, including children and young people.



Our Royce Application Scientist, **Dr Thomas Brown**, and LEMAS Degree Apprentice, **Macauley Hough**, discussed experimental specialist career options at Roundhay Sixth Form's Y12 Careers in Maths and Engineering Showcase in April.

The Leeds Nanotechnology Cleanroom team welcomed local secondary school students to the facility, as part of its work experience programme. The initiative is an opportunity for young people to gain hands-on experience in the cleanroom environment and explore semiconductor innovation career pathways.

New travel and conference funds launch for Bragg members

We expanded our travel and conference funding this year, introducing two new awards for our community.

Our new Research Technical Professional Conference Fund helps experimental specialists in our facilities attend materials research academic and industrial conferences in the UK and abroad and the Bragg Policy and Funder Engagement Mobility Fund enables individuals and groups to attend and host meetings with policymakers and funders.

Rory Gilroy, an experimental officer in our Leeds Nanotechnology Cleanroom, attended Intermag 2026 in Manchester in April.

They said: "I wanted to go to this conference as it is a great way for me to keep in touch with the current research themes and the wider magnetism community. I was able to see what new fabrication techniques are emerging and determine if we can implement these in our facilities."

Bringing our community together

We once again hosted a busy programme of events for our members this academic year. We were also delighted to welcome a variety of guests to the Sir William Henry Bragg Building and our experimental facilities.



We welcomed attendees to our flagship research conference, the **Bragg Exchange**, in January. Guest speakers included James Penny, Senior Policy Advisor at DSIT and Dr Katie Blaney, Deputy Director for Science at the EPSRC.



Royce@Leeds hosted the Henry Royce Institute **MS4DE Share & Showcase** at the Sir William Henry Bragg Building.



Our community learned about the wider materials landscape and the support available to help them develop their networks and further their research at our **Lunch@Bragg** series. Guest speakers included Dr Katarzyna Maltby from Innovate UK, Dr Matthew Sharpe from the University of Surrey Ion Beam Centre, and colleagues from the Thackray Museum of Medicine.



Colleagues from the **Department of Science, Innovation and Technology** and the **Engineering and Physical Sciences Research Council** visited our facilities.



We welcomed visitors from South Korea as part of a national tour organised by DSIT, as well as the UK-India Advanced Manufacturing Trade Mission 2025 delegation. These meetings were an opportunity for us to explore possible future collaborations.



Our **PhD Colloquium** returned in June, offering University of Leeds students the opportunity to present their research to peers and attend a career panel Q&A with guests from academia and industry.

Awards



Professor Helen Gleeson OBE was awarded the prestigious Polymer Physics Group Founders' Prize for her work on liquid crystal elastomers, which led to the creation of spin-out Auxetec Limited



Bragg Centre industry collaborator, **Quantum Science Ltd**, and University of Leeds spin-out, **Ionix Advanced Technologies Ltd**, were both awarded King's Awards for Enterprise in the innovation category this year



A team of Bragg Centre members at University of Leeds spin-out, **Hydra Manufacturing** were named North East, Yorkshire and the Humber Technology Startup of the Year and Overall StartUp of the Year at the UK StartUp Awards.



Professor Giles Davies was named as Fellow of the Learned Society of Wales for his outstanding contributions to the development of the terahertz quantum cascade laser and pioneering advances in terahertz imaging, spectroscopy and microscopy.

Find out more and get in touch

Visit our website:
leeds.ac.uk/braggcentre

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