

Engineering and Physical Sciences Research Council

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Making graphene work

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Category: Press release

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New research grants to enhance the use of wonder material

Research projects that will focus on how to enhance the 'manufacturability' of graphene, one of the thinnest, strongest and most conductive materials known to man, are to receive £21.5 million in funding.

Chancellor of the Exchequer, George Osborne announced the backing during an interview with Sir Paul Nurse who was guest editor of the BBC's Today programme on 27 December 2012.

Teams at Imperial College London, the universities of Cambridge, Durham, Exeter, Manchester and Royal Holloway University of London will use the funding for both research and equipment.

Welcoming the news, Minister for Universities and Science, David Willetts said:

"Scientists at the University of Manchester won the Nobel Prize for the discovery of graphene. It's now vital we harness the excellent research taking place in our world class institutions to exploit the commercial potential of this astonishing material. This significant investment will support cutting edge research projects to find everyday uses for graphene. They will foster innovation, drive growth and help the UK get ahead in the global race."

The universities will be working with industrial partners including Nokia, BAE Systems, Procter & Gamble, Qinetiq, Rolls-Royce, Dyson, Sharp and Philips Research.

Professor David Delpy, EPSRC's Chief Executive said:

"The discovery of graphene was the first step towards a revolution in materials. This funding will advance research into the uses of this incredible material and support the next steps towards applications that will benefit individuals, industry and the UK economy."

The University of Cambridge has been awarded over £12 million for research into graphene flexible electronics and optoelectronics, which could include things like touch screens. Professor Andrea Ferrari is working with a large consortium of electronics, technology, materials and product companies, to explore how these technologies might be developed and commercialised.

Imperial College London has been awarded over £4.5 million for equipment and research into engineering with graphene for multi-functional coatings and fibre composites and graphene three-dimensional networks. Professor Tony Kinloch at Imperial is working with a number of aerospace companies, including Airbus, to investigate the use of graphene in advanced structural composites as an alternative material to dissipate energy after lightning strikes.

Professor Clare Gray at Cambridge University and Professor Robert Dryfe at Manchester University are exploring potential use of graphene as super-capacitors and batteries for energy storage applications. These may be useful in addressing the limiting factors of storage for personal devices and the uncertainty and intermittency of renewable supplies in parts of the world that are off-grid.

Meanwhile, Procter and Gamble and Dyson will be collaborating with Professor Karl Coleman, a chemist at Durham University, to explore the potential applications of graphene composite - particularly for thinner, stronger material applications. Karl was the Royal Society of Chemistry Innovator of the Year 2011.

Details of funding:

Institution	Funding	Title
University of Cambridge	£3.0M	Graphene flexible electronics and optoelectronics [EP/K01711X/1] (GoW)
Imperial College London	£1.4M	Engineering with graphene for multi-functional coatings and fibre-composites [EP/K016792/1] (GoW)
Durham University	£1.6M	Engineering innovation in graphene nanocomposites for consumer product and packaging applications [EP/K016784/1] (GoW)
Imperial College London	£1.9M	Graphene three-dimensional networks [EP/K01658X/1] (GoW)
The University of Manchester	£1.9M	Electrochemical energy storage with graphene-enabled materials [EP/K016954/1] (GoW)
University of Cambridge	£2.3M	CVD enabled graphene technology and devices (GRAPHTED) [EP/K016636/1] (GoW)

Equipment only grants

Institution	Funding	Title
University of Cambridge	£6.9M	Graphene flexible electronics and optoelectronics: Bridging the gap between academia and industry [EP/K017144/1] (GoW)
Imperial College / NPL	£1.3M	Integrated graphene-based sensor devices and scalable microfabrication process development based on graphene-metal multilayer deposition [EP/K016407/1] (GoW)
University of Exeter	£1.1M	New manufacturable approaches to the deposition and patterning of graphene materials [EP/K017160/1] (GoW)

Royal Holloway University of London	£109,000	High frequency operation of epitaxial graphene [EP/K016822/1] (GoW)
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Notes for editors

The Engineering and Physical Sciences Research Council (EPSRC) is the UK's main agency for funding research in engineering and the physical sciences. EPSRC invests around £800 million a year in research and postgraduate training, to help the nation handle the next generation of technological change. The areas covered range from information technology to structural engineering, and mathematics to materials science. This research forms the basis for future economic development in the UK and improvements for everyone's health, lifestyle and culture. EPSRC works alongside other Research Councils with responsibility for other areas of research. The Research Councils work collectively on issues of common concern via Research Councils UK.

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[Grants on the Web \(GoW\)](#)