

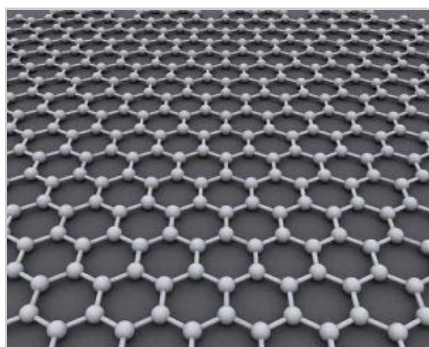
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Cambridge drawing up roadmap for billion euro graphene project

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Cambridge University's department of engineering has been handed the job of deciding how and where 1 billion euros is going to be spent as part of a new pan-European research project into super-material, graphene.



Just one atom thick, this sheet of carbon atoms shaped like chicken wire has a high electrical conductivity and optical transparency that make it ideal for a huge range of uses, ranging from mobile touchscreens to organic LEDs.

Led by Dr Andrea Ferrari of the engineering department, Cambridge University is to lead development of the science and technology roadmap for the European Commission's 10-year, 1 billion euro [Future Emerging Trends \(FET\) Flagship](#) project, [GRAPHENE-CA](#).

The Cambridge team will draw up structured plans for what new research is needed and the routes for the implementation of graphene in industrially viable technologies. It will also "determine what new facilities should be built in Europe" to expedite the vision.

The [press release](#) issued by the consortium leaves little doubt as to the potential of graphene: "Graphene, a single layer of carbon atoms, may be the most amazing and versatile substance available to mankind. Stronger than diamond, yet lightweight and flexible, graphene enables electrons to flow much faster than silicon. It is also a transparent conductor, combining electrical and optical functionalities in an exceptional way.

"Its unique properties will spawn innovation on an unprecedented scale and scope for high speed, transparent and flexible consumer electronics; novel information processing devices; biosensors; supercapacitors as alternatives to batteries; mechanical components; lightweight composites for cars and planes."

With large sums being pumped into graphene research in the US and South-East Asia, the project is designed to ensure that Europe can enjoy at least some of the fruits of its own invention.

"Graphene, a truly European technology, initiated in UK, is at the crossroad between fundamental research and applications. Exploiting the full potential of graphene will have huge impacts on society at large. We are thrilled that the EU Commission shares our view and believes in our focused and open approach to moving forward, at a time when the international community, from United States to Korea, is moving significant resources to strengthen their know-how and facilitate the roadmap to applications", said Dr Ferrari.

The team behind Nokia's new mobile concept, Morph- jointly developed in Cambridge - have outlined [how graphene would play an important role](#) in different components of the new device.

European scientists Andre Geim and Konstantin Novoselov were awarded the [2010 Nobel Prize in Physics](#) for their research into graphene.

GRAPHENE-CA aims to bring together an, interdisciplinary pan-European research community, acting as a sustainable incubator of new ICT applications, ensuring that European industries will have a major role in driving the technology over the next 10 years. An effective transfer of knowledge and technology to industries will enable product development and production.

The graphene flagship already includes over 130 research groups, representing 80 academic and industrial partners in 21 European countries.

The Cambridge-led action plan for the FET Flagship will be submitted in 2012 to the European Commission, aiming for GRAPHENE to be one of the two flagships launched in 2013.

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