

Graphene and chemistry create optically responsive devices

By combining graphene's properties with precision molecular chemistry, scientists from the Graphene Flagship say it is possible to create graphene based devices that respond to light. This, the team claims, paves the way for devices such as photo sensors and optically controllable memories.

The researchers have combined graphite powder with molecules capable of changing their conformation as a result of light irradiation, creating graphene inks which can then be used to make devices capable of switching current in a reversible fashion when exposed to light.

Professor Paolo Samori, from the Université de Strasbourg, said: "This is the first step towards the development of graphene based multicomponent materials and their use for the fabrication of multifunctional devices. If you imagine a sandwich, with graphene sheets separated by multiple layers, each integrating a different functional molecular component, [this leads] to a multiresponsive graphene based nanocomposite."

"The Graphene Flagship was always about the combination of graphene and other materials to form new hybrid structures," said Professor Andrea Ferrari from the Cambridge Graphene Centre, who is also chair of the Flagship Management Panel. "This work is an interesting proof of principle of this concept and of the cross disciplinary nature of the Flagship Research. Chemistry, Physics, Engineering, Fundamental Science and Optics come together under the Flagship umbrella to develop new exciting device concepts."

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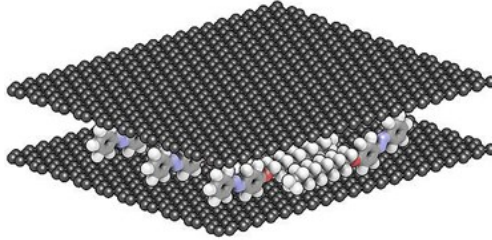
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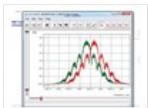
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