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Graphene shown to enhance light-harvesting performance

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Submitted by **Neelesh Raghuwansi** on Wed, 08/31/2011 - 07:56 **Science News**
TNM



According to new findings reported in the journal Nature Communications, graphene a potential replacement for silicon can be described as a wonder material" which is capable of boosting light-harvesting performance.

Since graphene apparently conducts heat and electricity like no other substance, researchers at the universities of Cambridge and **Manchester** have demonstrated the graphene can bring about a 20-fold enhancement in harvesting light - a development which can lead to [advances](#) in [high-speed Internet](#).

Earlier researches have already shown that generation of [electric](#) power is possible by putting two closely-spaced metallic wires on top of graphene and shining light on this so-called plasmonic nanostructure.

Meanwhile, commenting on the new findings, the researchers including Nobel Prize-winning scientists Professors Andre Geim and Kostya Novoselov said that the unique nature of electrons in graphene, along with their high [mobility](#) and high velocity, can make the graphene [devices](#) can be tens and, potentially, hundreds of times faster than communication rates in the speediest of [Internet cables](#).

Noting that thus far the key focus of graphene research has been on fundamental [physics](#) and electronic devices," Prof Andrea Ferrari - from the Cambridge engineering department said that the new results show graphene's great potential in the fields of photonics and optoelectronics, where the combination of its unique optical and electronic properties with plasmonic nanostructures can be fully exploited."

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