

Graphene is a material that, as its name suggests, is created from graphite. The structure of graphene is composed of a two-dimensional sheet, composed solely of carbon atoms arranged in a hexagonal pattern. Andre Geim and Konstantin Novoselov are the two physicists who braved the theoretical impossibility of building such a structure and managed to isolate graphene sheets in 2004. They won a Nobel Prize in 2010 for their incredible discovery. What is graphene for? Well, being a material 1 million times smaller than a hair and 200 times stronger than steel, it would allow the creation of more efficient computers, the creation of touch screens, solar panels and probably solar cells (graphene is as good a conductor as copper). Graphene is a material with many practical attractions that attract scientists from all over the world. The graphene market is worth no less than 100 millions dollars. The numbers of patents filed on graphene is led by China with more than 1,500 patents. Europe has filed 500 patents (but it was Europeans who invented graphene !). Europe has therefore created the “Flagship”, a project that aims to develop commercial applications of graphene with a budget of 1 billion dollars. However, it is complicated to manufacture graphene in industrial quantities, indeed, 1cm square of good quality graphene costs around 100 dollars, or, it is 300 times more expensive than the materials used in solar panels.

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