

Solar paint could power our homes

It's a decade since Andrei Geim and Kostya Novoselov, made an amazing discovery. It was a Friday afternoon, at Manchester University, in a building less than twenty minutes drive from Itac's factory. The two eminent scientists – who in 2010 won the Nobel Prize in Physics for their work - realised that they could form layers of an amazingly strong material, just one molecule thick, by simply peeling back adhesive tape that they had pressed into flakes of Graphite - a material that forms part of many Itac coatings.

They had discovered Graphene - a two dimensional material consisting of a single layer of carbon atoms arranged in a honeycomb structure. It is the thinnest material known and also one of the strongest. Graphene is transparent and extremely stretchable, what's more it conducts electricity with the same efficiency as copper. It promises to become the most significant material of our age, with research teams around the world busy finding new ways it can be used to exploit its vast potential.



In a new development Professor Kostya Novoselov, and colleagues at the University of Singapore have found that if they combine layers of Graphene with other single one atom thick layers of transition metal dichalcogenides, which react to light, they can generate electricity. This innovative material could help create a new generation of mobile phones and other devices, which will be powered by the sun. The same team are now developing paints using their new material. It is anticipated that this may eventually lead to houses and other buildings being coated on the exterior to generate the power to operate lights and run appliances inside the property.