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Graphene: the wonder material of the 21st century

Bendable and transparent smart phones, lighter air planes... All this and much more could soon become reality thanks to graphene. On 2 June, MEPs discussed with experts the potential of using the wonder material in various sectors, from electronics to health. Nobel Prize laureate Konstantin Novoselov, who co-discovered graphene, said: "Science is the easy part. To develop a technology, you should know what products you are aiming at, and this should be coming from the industry."

What graphene is

Graphene was discovered in 2004 by Andre Geim and Konstantin Novoselov, who received the Nobel Prize in Physics for this in 2010.

It is a material made of a single layer of carbon atoms arranged in a hexagonal lattice. Being a million times thinner than a human hair, it is the thinnest object ever created. Not only is graphene lightweight and flexible, it is also the world's strongest material, being 200 times stronger than steel.

It also conducts electricity faster than most other materials and if stacked in layers it forms graphite, which is also found in pencils.

EU in the lead

Over the next 10 years the EU will invest €1 billion in developing graphene-based technologies through the Graphene Flagship initiative, which is part of the Horizon 2020 programme.

The aim is to develop graphene and related layered materials into something that can be used for everyday products. Novoselov said: "The most important outcome would be that Europe keeps playing a leading role in innovation and production. By the end of the 10 years [of the Flagship programme], we need to have the new graphene - the next wonder material."

Dawn of the graphene age?

During the STOA workshop chaired by Austrian EPP member Paul Rübig, MEPs discussed with experts the potential of using graphene in various sectors – ranging from energy and

engineering to electronics and health – and its impact on the European economy and society.

Polish EPP member Jerzy Buzek, chair of the industry and research committee, commented: “We need more graphene-like flagship initiatives in applied sciences and cooperation with the industry.”

Greek S&D member Eva Kaili, the first vice-chair of STOA, added: “The stone, bronze and iron ages were defined by materials bearing new technologies. It might be that we are entering the graphene age.”

Find out more

The workshop’s programme and presentations
Video of the workshop
Briefing about graphene
European Commission press release: press release: New step towards graphene applications
Graphene flagship
Graphene infographic

Carbon nanotube pellet. Carbon nanotubes are one atom thick sheets of graphite, called graphene, rolled into cylindrical form

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Nobel Prize winner on how to foster innovation

http://www.europarltv.europa.eu/en/player.aspx?pid=66839bd7-997f-418a-9a15-a4ab009a64e7

https://www.youtube.com//watch?v=siZDjBW6xPs