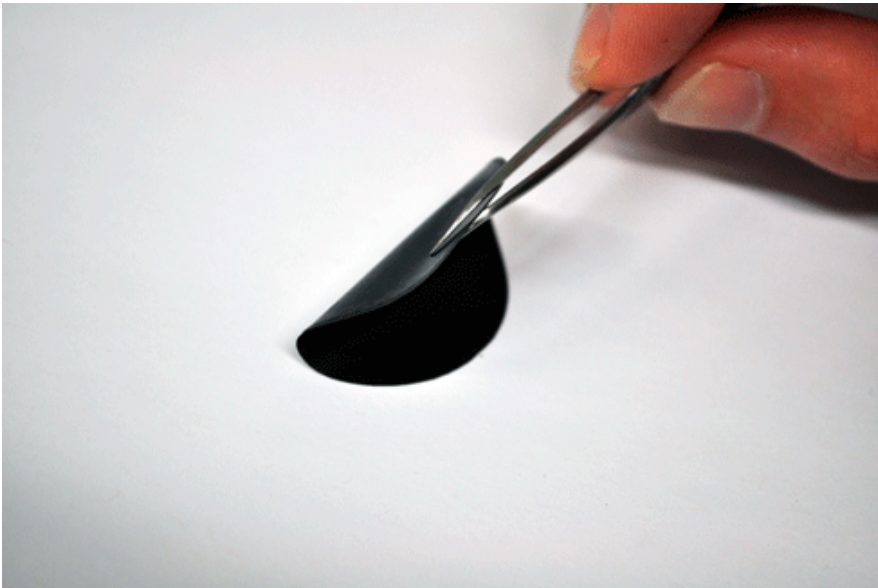


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## Super-strong, super-thin alternative to steel

**Australian researchers have developed a new carbon-based material that is as thin as paper and ten times stronger than steel.**



Credit: Lisa Aloisio

Known as graphene, the material could be used to make lighter and stronger cars and planes that use less fuel, generate less pollution, are cheaper to run and ecologically sustainable.

Preliminary research on graphene from the University of Wollongong has been further developed by a team at the University of Technology Sydney, who have recently published the work in the *Journal of Applied Physics*.

Researchers milled, purified and filtered raw graphite before reshaping and reforming it into 'nanosheets' that are as thin as paper. The graphene nanosheet stacks have exceptional thermal, electrical and mechanical properties, and can be made into any shape. The material also has extraordinary bending, rigidity and hardness properties.

Lead researcher, Dr Ali Reza Ranjbartoreh, says the material is lighter, stronger, harder and more flexible than steel. 'It is also a recyclable and sustainable manufacturable product that is eco-friendly and cost-effective in its use,' he adds.

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