

Engineers build world's lightest mechanical watch thanks to graphene

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An ultralight high-performance mechanical watch made with graphene is unveiled today in Geneva at the Salon International De La Haute Horlogerie thanks to a unique collaboration.

The University of Manchester has collaborated with watchmaking brand Richard Mille and McLaren F1 to create world's lightest mechanical chronograph by pairing leading graphene research with precision engineering.

The RM 50-03 [watch](#) was made using a unique composite incorporating graphene to manufacture a strong but lightweight new case to house the delicate watch mechanism. The graphene composite known as Graph TPT weighs less than previous similar materials used in watchmaking.

Graphene is the world's first two-dimensional material at just one-atom thick. It was first isolated at The University of Manchester in 2004 and has the potential to revolutionise a large number of applications including, high-performance composites for the automotive and aerospace industries, as well as flexible, bendable mobile phones and tablets and next-generation energy storage.

The strap of the new watch has also been improved by the addition of graphene material. The rubber of the strap was also injected with graphene which has shown to improve its mechanical properties and its resistance to wear.

Overall the ultralight watch weighs just 40 grams and is extremely durable. Prof Young, Professor of Polymer Science and Technology at the University, said of the collaboration: "The project with McLaren and

Richard Mille involved an investigation into the possibility of incorporating graphene into components in composite watches to enhance performance with the view of saving weight."

Provided by University of Manchester

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