

Graphene printing technique developed by Cambridge University and Novalia

By [Cambridge News](#) | Posted: October 19, 2015



The graphene printing method is compatible with standard commercial printers

Graphene is being used in a new high-speed [printing](#) method which could pave the way for low-cost printed electronics

Developed by researchers at the Cambridge University in collaboration with city [technology company](#), Novalia, the method allows graphene and other electrically conducting materials to be added to conventional water-based inks and printed using typical commercial equipment. It is the first time that wonder material graphene has been used for printing on a large-scale commercial printing press at high speed.

"We are pleased to be the first to bring graphene inks close to real-world manufacturing. There are lots of companies that have produced graphene inks, but none of them has done it on a scale close to this," said Dr Tawfique Hasan of the Cambridge Graphene Centre, which developed the method.

"Being able to produce conductive inks that could effortlessly be used for printing at a [commercial](#) scale at a very high speed will open up all kinds of different applications for graphene and other similar materials."

Currently, printed conductive patterns use a combination of poorly conducting carbon with other materials, most commonly silver, which is expensive. Silver-based inks cost £1,000 or more per kilogram, whereas this new graphene ink formulation would be 25 times cheaper. What's more, the graphene-based inks have been printed at a rate of more than 100 metres per minute, which is in line with commercial production rates for graphics printing, and far faster than earlier prototypes which were developed by Hasan and his team, PhD students Guohua Hu, Richard Howe and Zongyin Yang two years ago.

In the short term, the researchers hope to use their method to make printed, disposable biosensors, energy harvesters and ID tags.

Novalia has form in the printed electronics arena, having designed printed DJ decks and a functioning printed drum kit, both of which have featured in the News.

"This method will allow us to put electronic systems into entirely unexpected shapes," said Chris Jones of Novalia. "It's an incredibly flexible enabling [technology](#)."

Read more:

<http://www.cambridge-news.co.uk/Graphene-printing-technique-developed-Cambridge/story-28012327-detail/story.html#ixzz3p2IZjcQJ>