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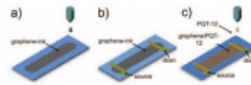
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Cambridge University demonstrate inkjet-printed graphene electronics

November 24, 2011

Inks augmented with graphene polymer to overcome traditional shortcomings of printed electronics.

Students at the University of Cambridge have managed to overcome the typical issues with inkjet-printed electronics by augmenting the polymers with graphene, the "wonder-material of the moment", reports the MIT-published [Technology Review](#).



Traditional inkjet printed electronics, including digital paper and disposable RFID tags, tend to underperform substantially compared to conventional integrated circuitry, being slower than silicon-based models.

However a team led by Andrea Ferrari has discovered a way to readily produce graphene by "chemically chipping flakes off a block of graphite and filtering them to remove any that might clog the printer heads.

"They then add the flakes to make a solvent called N-Methylpyrrolidone, or NMP, which minimizes problems such as the coffee ring effect that can occur when some solvents evaporate.

"Finally they've put this stuff in their printers and printed out a few circuits and thin film transistors."

Initial tests suggest the graphene-based inks match or better the performance of most other inks available, with further improvements predicted.

Ferrari and her team concluded their paper stating that "this paves the way to all-printed, flexible and transparent graphene devices on arbitrary substrates".

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