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## News letter - on making the difference.

### *Is graphene a miracle material?*

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1. [Is graphene a miracle material?](#) "The material graphene was touted as "the next big thing" even before its pioneers were handed the Nobel Prize last year. Many believe it could spell the end for silicon and change the future of computers and other devices forever. Graphene [has been touted as](#) the "miracle material" of the 21st Century. Said to be the strongest material ever measured, an improvement upon and a replacement for silicon and the most conductive material known to man, its properties have sent the science world - and subsequently the media - into a spin." [news.bbc.co.uk](http://news.bbc.co.uk)

3. [Speedier Cell Phone Circuitry](#) "IBM has shown graphene could replace other materials in circuits that handle wireless signals. [Technologyreview.com](http://Technologyreview.com)

5. [Chemist developing materials to detect, repel E. coli-](#) "The ChemComm paper, Advincula says, describes a graphene material that is proving to be an effective antimicrobial, while the research appearing in the journal Chemistry of Materials uses a conducting polymer that can repel E. coli. He says his team has created a smart film that not only can be used to turn bacterial adhesion on and off, but also may be used for detecting bacteria. " [rdmag.com](http://rdmag.com)

7. [IBM's graphene circuit could shake up telecommunications-](#) "IBM Research scientists have recently achieved a milestone in creating a building block for the future of wireless devices. In a paper published in the magazine *Science*, IBM researchers announced the first integrated circuit fabricated from wafer-size graphene, and demonstrated a broadband frequency mixer operating at frequencies up to 10 gigahertz (10 billion cycles/second)." [rdmag.com](http://rdmag.com)

9. [Graphene polarizer may broaden telecom bandwidth](#) — National University of Singapore have invented an ultra-slim broadband polarizer that uses graphene,..to convert light beams into polarized light...that can broaden the bandwidth of prevailing optical fibre-based telecommunication systems". [rdmag.com](http://rdmag.com)

2. [Penn Engineers: Two Dimensional Graphene Metamaterials and One-Atom-Thick Optical Devices](#) Two [University of Pennsylvania](#) engineers have proposed the possibility of two-dimensional metamaterials. These one-atom-thick metamaterials could be achieved by controlling the conductivity of sheets of graphene, which is a single layer of carbon atoms...This allows you to change the conductivity of different segments of a single sheet of graphene differently from each other... In other words, you can do transformation optics using graphene." [upenn.edu](http://upenn.edu)

4. [Graphene will change the way we live](#) — "The development of graphene transistors would in theory be able to run at much faster speeds and be able to ultimately battle the heat at a microscopic scale... two scientists; Konstantin Novoselov and Andre Geim, were awarded the 2010 Nobel Prize in physics for their pioneering work on the discovery of graphene. The award acknowledged graphene's promise to revolutionize the electronics industry and the potential production of lightweight, stronger-than-steel materials among a long list of other coming applications " [bigthink.com](http://bigthink.com)

6. [Team Reports Scalable Fabrication of Self-Aligned Graphene Transistors, Circuits](#) -"Graphene, a one-atom-thick layer of graphitic carbon, has the potential to make consumer electronic devices faster and smaller. But its unique properties, and the shrinking scale of electronics, also make graphene difficult to fabricate and to produce on a large scale." [sciencedaily.com](http://sciencedaily.com)

8. [Graphene May Gain an On-Off Switch, Adding Semiconductor to Long List of Material's Achievements](#)" [sciencedaily.com](http://sciencedaily.com)

10. "[Quantum Simulator Prototype: Toward New Class of Semiconductor Nanostructures That Probe Quantum World](#) [Science-daily.com](http://Science-daily.com)