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## US boffins tune into carbon nanotube radio

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By [Lester Haines](#)

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A team of scientists from the University of Illinois and Northrop Grumman Corp Electronics Systems has succeeded in creating a microscopic functioning radio constructed from carbon nanotubes, Reuters reports.

The nanoradio consists of two radio frequency amplifiers, a radio frequency mixer and an audio amplifier, crafted from carbon nanotubes on a quartz wafer. It also has a nanotube output transistor into which you plug your traditional headphones, and relies on an old-school antenna.

The researchers say they were able to pick up traffic reports from a Baltimore radio station on their device, which was designed as a test vehicle to "develop nanotubes as a higher-performing semiconductor", as the University of Illinois' professor John Rogers explained.

The secret is to get the nanotubes in perfectly-aligned rows, "much like strands of silky hair that have been combed flat", as Rogers put it. To do this, the team "make the tubes by combining carbon and heat and a catalyst on a special wafer material that makes the tubes line up in an orderly way".

The end result is something which might challenge silicon-based semiconductors. Rogers said: "The radio is really a step along the path to building new platforms for electronics technology. The radio itself is not interesting. But the fact that we are at a point that we can do things like a radio is a good milestone for us."

The boffins' study appears in the *Proceedings of the National Academy of Sciences*. ®

### Bootnote

Carbon nanotubes, eh, is there anything they can't do? As we [recently reported](#) ([http://www.theregister.co.uk/2008/01/16/darkest\\_material/](http://www.theregister.co.uk/2008/01/16/darkest_material/)), scientists have used the little blighters to create the blackest material ever, and all they need to do now is knock up an MP3 nanoplayer, embed it in the Fabric of Lightlessness™ and you've got the prospect of a stealth Goth suit which can play Black Sabbath. Result.

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