Ink-jet printing produces nanotube transistors

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Ink-jet printing produces nanotube transistors

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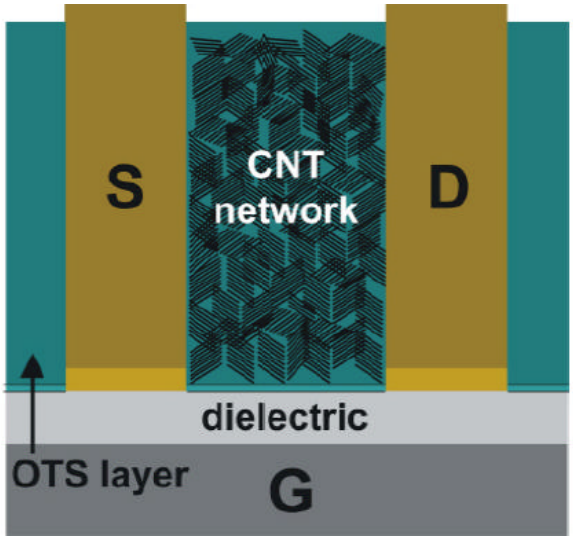
Recent developments in plastic electronics look set to revolutionize the electronic industry. A variety of applications are expected that are not possible with conventional silicon chips, which are rigid and limited in size.

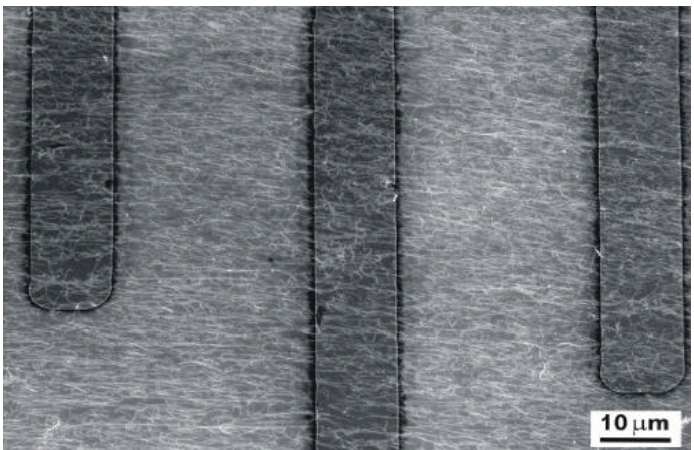


carbon nanotube thin film transistor.jpg

Schematic of the carbon nanotube thin film transistor device structure. There is a hydrophobic self-assembled monolayer prepared on the substrate prior to the ink-jet deposition of carbon nanotubes. Credit: A Ferrari.

Ink-jet printing is one of the most promising techniques for making large area, inexpensive plastic electronics on which a range of electronic components can be printed. These include transistor circuits, photovoltaic films, organic light-emitting diodes and photovoltaic films.

Now, Paul Beecher and colleagues of the University of Cambridge and co-workers at the University of Waterloo and the London Centre for Nanotechnology have shown that ink-jet printing can be extended to dispensing solid materials like carbon nanotubes without clogging the ink-jet nozzles. "This significantly widens the scope of applications for which ink-jet printing is a viable fabrication technique," Beecher told nanotechweb.org.



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