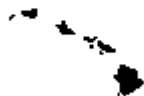


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Nanowires Assemble into Speedy Circuits

Technique could allow creation of lower cost electronic devices

Betterhumans Staff
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Nanowires that align themselves on a chip of glass have been used to create rudimentary electronic devices that provide good performance at a low cost.

Chemists and engineers at [Harvard University](#) made the circuits without high-temperature production or high-priced silicon.

Led by chemist [Charles Lieber](#) and engineer [Donhee Ham](#), the researchers created the circuits at low temperature by running a nanowire-laced solution over a glass substrate and following this with normal [photolithography](#) to etch a circuit pattern.

"By using common, lightweight and low-cost materials such as glass or even plastic as substrates, these nanowire circuits could make computing devices ubiquitous, allowing powerful electronics to permeate all aspects of living," says Lieber.

Lieber, Ham and colleagues used their approach to create nanowire-based logical inverters and ring oscillators, the latter being critical for almost all digital electronics.

They report that their device reached a speed of 11.7 megahertz, beating other nanomaterial circuits by a factor of about 10,000.

"This finding gives us confidence that we can ramp up these elementary circuits to build more complex devices, which is something we now plan to do," says Ham.

The research is reported in the journal [Nature](#) ([read abstract](#)).

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