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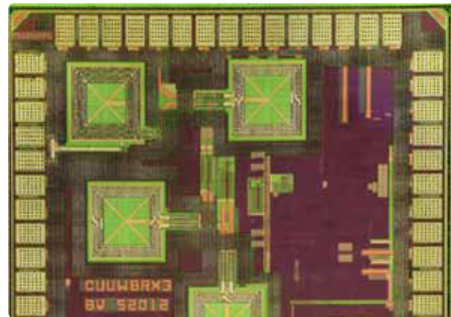
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## Super Efficient Nanoscale Wireless Devices Produced

by [Ben](#) on February 8, 2013 | [RSS](#)



*Nanoscale Wireless Device Developed at Columbia University*

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Don't let anyone tell you any differently, but size does matter. This is just as true when we take a look at how computing power has advanced over the decades. The larger the machine, the more power it consumes. Conversely, smaller machines are more efficient.

Take, for instance, the [ENIAC](#) [Electronic Numerical Integrator And Computer] was built in 1946 for about \$6 million in today's dollars. ENIAC weighed thirty tons and occupied about 2,400ft<sup>3</sup>. With a processing speed of 100kHz, or 0.0001GHz, it averaged power consumption of 150kW. The laptop that I'm writing on, by contrast, runs on four cores at 2.3GHz, roughly 100,000 times faster than ENIAC. My [laptop](#) weighs just 5.5lbs and occupies about 163in<sup>3</sup>, or 0.09ft<sup>3</sup>, and runs on as little as 10W, or 0.01kW.

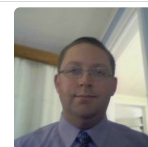
The next step in size reduction, of course, is on the nanoscale, and with a corresponding increase in efficiency. [Peter Kinget](#), professor at Columbia University, has been working on **wireless devices** on the **nanoscale**, which, as expected, use far less energy than larger devices.

"We are using and exploiting the fact that power consumption—and the energy you need to do things—becomes very, very low as you pack more and more functionality into smaller and smaller spaces," says Kinget.

Kinget's **nanoscale wireless devices** are a hundred times more **efficient** than standard technology, and thus require miniscule amounts of energy. They might have batteries that last for years or decades, or, if combined with [nanoscale solar cells](#), could even operate off ambient light.

The size and construction of these devices does limit their power capabilities, and so will most likely be set up in network relay systems to limit the distance over which they need to communicate. Such a network relay system of nanoscale wireless devices could be used to monitor heating and cooling systems in office or apartment buildings, or monitor atmospheric conditions for more accurate forecasting.

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Ben has been a Master Automobile Technician for over ten years, certified by ASE, Toyota, and Lexus. He specialized in electronic systems and hybrid technology. Branching out now, as a Professional Freelance Writer, he specializes in research and writing about his main area of interest, Automotive Technology, Alternative Fuels, and Concept Vehicles.

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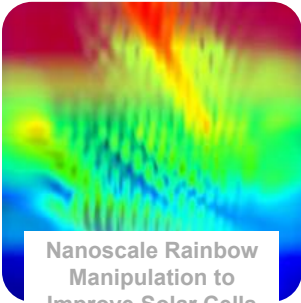
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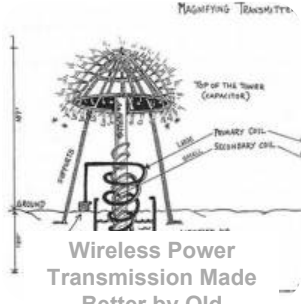
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