to build applications on top of it," Welltok board member Mohamad Makhzoumi said in a statement. "This could bring about a paradigm shift not only in how people interact with computers, but in how we live our lives."

Powered by Big Data, IBM will give app developers the option to use their own data, or access the IBM Watson Content Store.

"Together with our partners we'll spark a new class of applications that will learn from experience, improve with each interaction and outcome, and assist in solving the most complex questions facing the industry and society," Rhodin said.

INVESTIGATING WATSON
Michael Rhodin explores Watson-powered apps with Brooke Aguilar, vice president of global development at Fluid, and Welltok CEO Jeff Margolis.

Watson Analyzed
17,906 Health & fitness articles
10,821 CellWell documents
8,432 Webpages
12,728 Forums & blog posts

Watson Considered
Evan is a 40 year old and male
Diagnosed with prediabetes
Evan frequently travels
Evan's dietary constraints
Evan's location
His previous goals and activities

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WHAT'S NEW NOW / EXTREMETECH

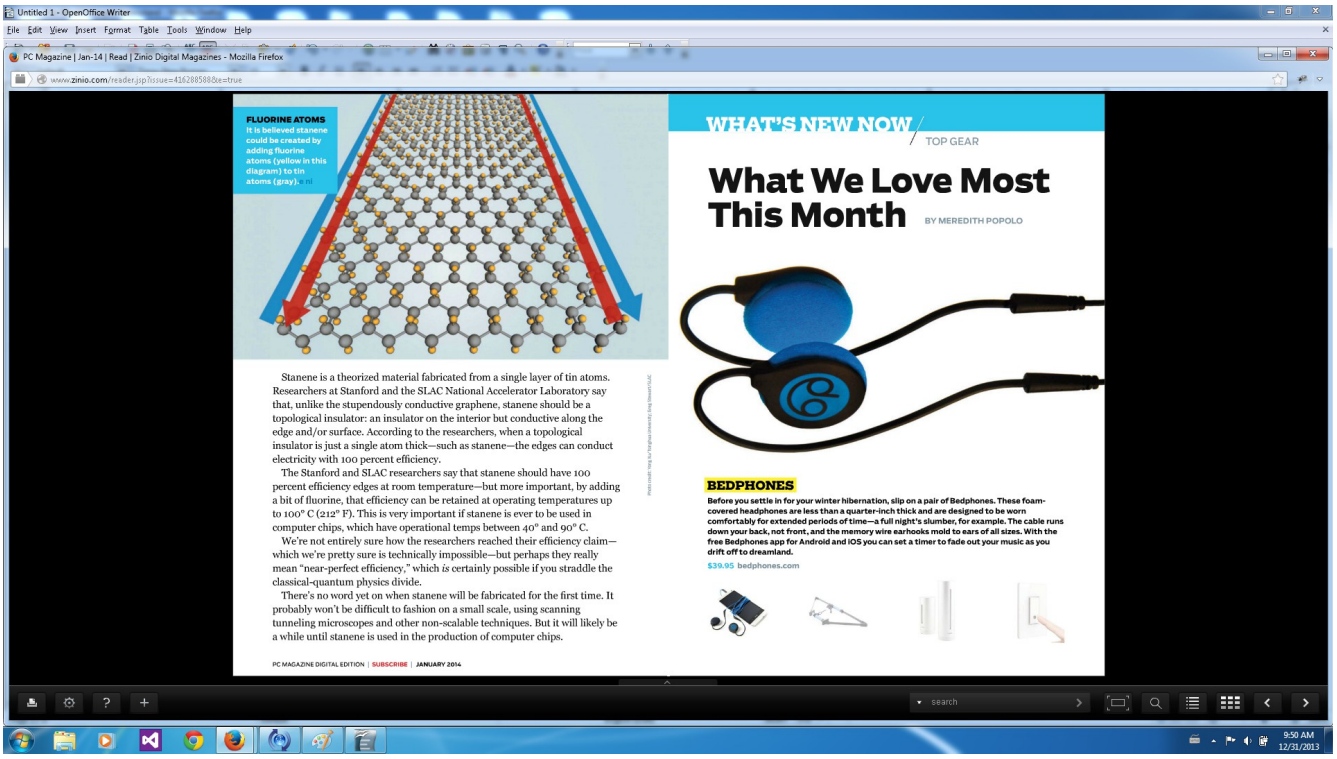
Stanene: For When Copper Isn't Conductive Enough

Move over, graphene and carbine: Stanene wants to replace the high-resistance copper wires that are a big limiting factor in current computer chips.

BY SEBASTIAN ANTHONY

A SINGLE LAYER OF TIN
Stanene is theorized as a perfectly conductive material that could be fabricated from one layer of tin atoms.

Modern computer chips have over one billion transistors, each of which must be connected up to form an actual logic device—which, these days, can mean more than 60 miles (100km) of copper wiring. Though copper is usually good at conducting, things get more complex when connecting wires are just a few atoms apart. Not only are copper wires very fragile, but as they get thinner and thinner, quantum physics takes over from classical physics and throws a wrench in the works.



FLUORINE ATOMS
It is believed stanene could be created by adding fluorine atoms (yellow in this diagram) to tin atoms (gray).

Stanene is a theorized material fabricated from a single layer of tin atoms. Researchers at Stanford and the SLAC National Accelerator Laboratory say that, unlike the stupendously conductive graphene, stanene should be a topological insulator: an insulator on the interior but conductive along the edge and/or surface. According to the researchers, when a topological insulator is just a single atom thick—such as stanene—the edges can conduct electricity with 100 percent efficiency.

The Stanford and SLAC researchers say that stanene should have 100 percent efficiency edges at room temperature—but more important, by adding a bit of fluorine, that efficiency can be retained at operating temperatures up to 100° C (212° F). This is very important if stanene is ever to be used in computer chips, which have operational temps between 40° and 90° C.

We're not entirely sure how the researchers reached their efficiency claim—which we're pretty sure is technically impossible—but perhaps they really mean "near-perfect efficiency," which *is* certainly possible if you straddle the classical-quantum physics divide.

There's no word yet on when stanene will be fabricated for the first time. It probably won't be difficult to fashion on a small scale, using scanning tunneling microscopes and other non-scalable techniques. But it will likely be a while until stanene is used in the production of computer chips.

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WHAT'S NEW NOW / TOP GEAR

What We Love Most This Month

BY MEREDITH POPOLO

BEDPHONES
Before you settle in for your winter hibernation, slip on a pair of Bedphones. These foam-covered headphones are less than a quarter-inch thick and are designed to be worn comfortably for extended periods of time—a full night's slumber, for example. The cable runs down your back, not front, and the memory wire earhooks mold to ears of all sizes. With the free Bedphones app for Android and iOS you can set a timer to fade out your music as you drift off to dreamland.

$39.95 bedphones.com