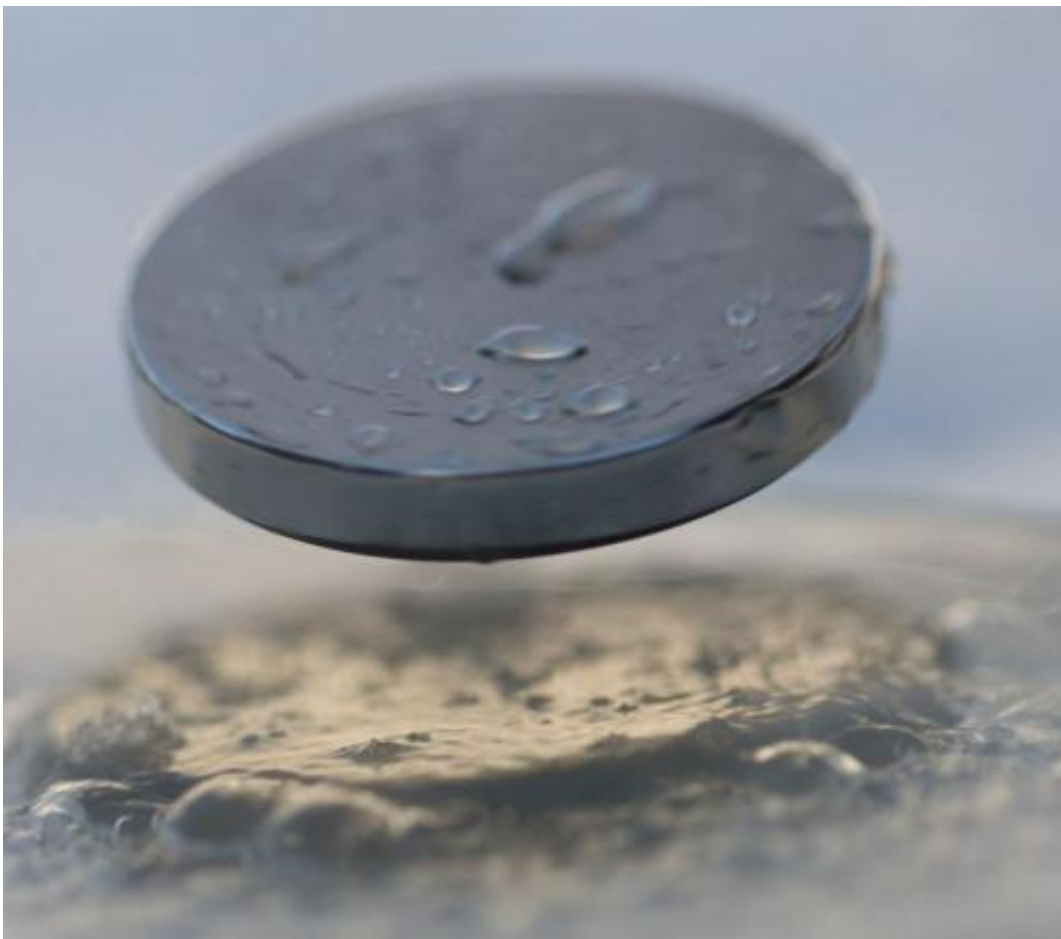


## Best of Last Week – Star Wars shield possible, new element confirmed and brain based microchip

May 5 2014, by Bob Yirka

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Superconducting materials expel magnetic fields, whose repulsive force can levitate a magnet, as shown here. Nevertheless, studies have shown superconductivity and magnetism can coexist in the same material. Now SLAC and Stanford researchers show that the two phases are interwoven at a very fine, microscopic level in a type of high-temperature superconductor known as an iron

pnictide, and reveal how one phase gives way to the other. Credit: Julien Bobroff, Frederic Bouquet and Jeffrey Quilliam/Laboratory of Solid State Physics, LPS, via Wikimedia Commons

(Phys.org) —Serious physics research has been in the news a lot this past week. First up: Researchers in Germany have set the stage for the introduction of a new super-heavy element to the periodic table after [confirmation of superheavy element 117](#). Also, in the U.S., [scientists watched as high-temperature superconductivity emerged out of magnetism](#)—they demonstrated how high-temperature superconductivity emerged out of magnetism in a particle of iron—a first. Physicists the world over celebrated (and possibly breathed a sigh of relief) as news of the [first rigorous formulation supporting Heisenberg's famous 1927 principle](#) by a small but varied team of researchers, who came up with a new way of defining measurement errors.

In other news, a team of researchers working in Arizona announced: [Mystery of the pandemic flu virus of 1918 solved](#). It arose, they claim, due to genetic material from a [bird flu virus](#) being introduced into the same person that already had an existing flu variant—the result was a pandemic that killed millions. Sadly, there's nothing stopping it from happening again.

It was a good week for new technology advances as well; at the University of Leicester [physics students devised a concept for \*Star Wars\*-style deflector shields](#)—they've proven that the kinds of shields used in the *Star Wars* movies are scientifically feasible. Meanwhile, at Stanford University, [Scientists created a circuit board modeled on the human brain](#)—it has energy-efficient microchips that run 9000 times faster than the typical chips in a desktop computer, approaching the speed at which our own brains operate. And speaking of the brain, a team working for

DARPA has announced that [a brain implant to restore memory](#) is coming soon. It's a tiny chip the army wants to help restore memory loss in injured soldiers.

Also, many people might be interested in knowing that a [study reveals a way to improve chances of winning at rock-paper-scissors](#). The team in China filmed a crowd of volunteers playing the famous hand game and discovered that there is something people do that can give opponents a slight edge—if they know about it.

And finally, an homage of sorts, as researchers in Britain have found that a [mother's diet affects the 'silencing' of her child's genes](#). What a pregnant woman eats, they found, can have a profound impact on gene function in the baby she's carrying. Something those in the U.S, may want to ponder as we approach Mother's Day this Sunday. It might be a good time to send Mom a card, or something.

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