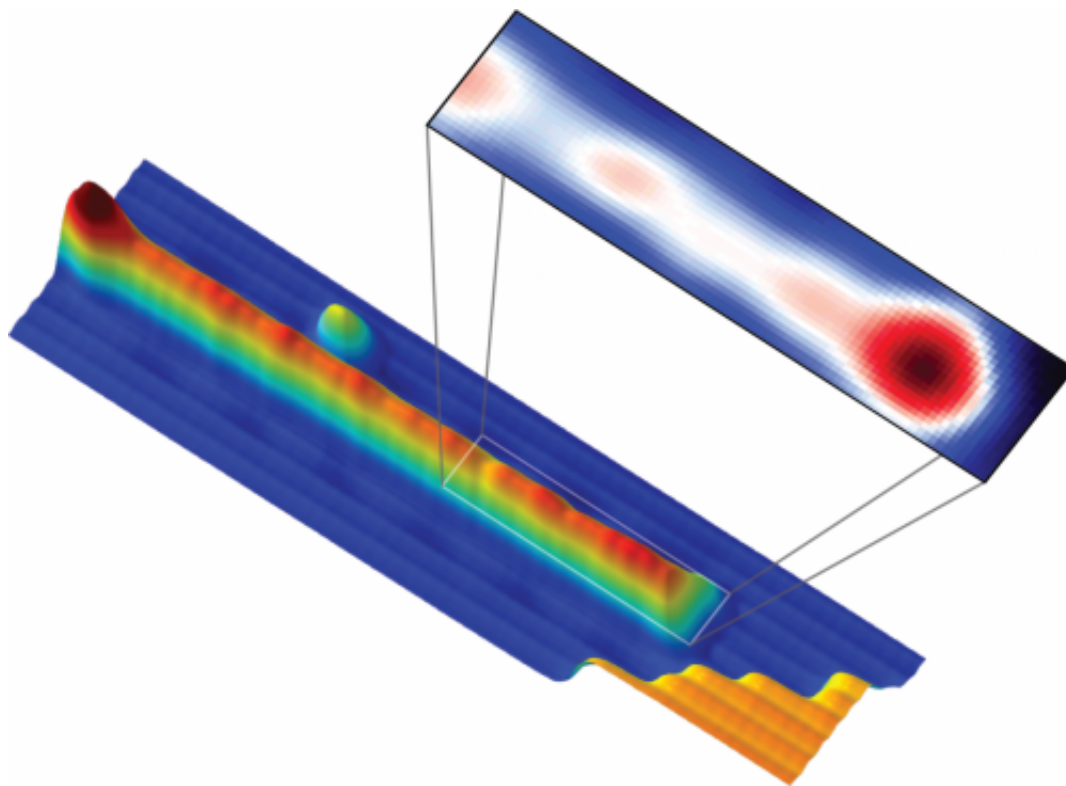


Best of Last Week - Observation of elusive antiparticle, mystery on Titan and reversing memory loss from Alzheimer's

October 6 2014, by Bob Yirka



Princeton University scientists used scanning-tunneling microscope to show the atomic structure of an one-atom-wide iron wire on a lead surface. The zoomed-in portion of the image depicts the quantum probability of the wire containing an elusive particle called the Majorana fermion. Importantly, the image pinpoints the particle to the end of the wire, which is where it had been predicted to be over years of theoretical calculations. Credit: Yazdani Lab, Princeton University

(Phys.org) —It was another interesting week in pure physics research as a team in India revisited superposition with [a proposed resolution of the double-slit experiment paradox using Feynman path integral formalism](#)—they're looking to resolve a discrepancy with the Schrödinger wavefunction. Meanwhile, [another team at Princeton has observed the Majorana fermion, an elusive particle that is its own antiparticle](#)—a possible step toward the creation of computers based on quantum mechanics. Not to be outdone, [yet another team has found a Higgs-gravity connection that may leave traces in white dwarfs](#)—the Higgs boson experiments conducted in 2012, it turns out, might just play a major role in finally understanding the nature of gravity via an investigation into the connection between the coupling of spacetime curvature and the Higgs field.

In other astrophysics news, researchers here on Earth were able to watch as [a mysterious feature evolved in a Titan sea](#) courtesy of NASA's Cassini spacecraft. The bright object seen on Saturn's moon was observed to be changing over time. Researchers aren't sure what it is, but suspect it could be bubbles, waves, suspended solids or something forming beneath the surface.

In more practical news, officials have announced that [the first floating solar farm in the UK has come to life in Berkshire](#)—the farm won't take up valuable farmland and is the first of many to come. In related news, a team of researchers has come up with what they are calling [the world's first "solar battery" that runs on light and air](#)—it's a solar cell that stores its own power.

There was also some good news for millions of people the world over as [a team of researchers has been attacking type 2 diabetes from a new direction with encouraging results](#). A drug normally used for another purpose was found to burn fat in liver cells, a precursor to the disease. Also, [another team in Denmark has found a new material that steals](#)

[oxygen from the air](#)—one teaspoon can hold a whole roomful of oxygen, perhaps doing away with oxygen tanks for those with lung impairments, offering a new lease on life.

And finally in some truly exciting medical news, [a team of researchers has demonstrated a way to reverse memory loss due to Alzheimer's for the first time ever](#)—it involves a 36-point therapeutic program that involves a wide array of therapies ranging from diet changes, to brain stimulation and pharmaceuticals. It's the first study to show that such [memory loss](#) does not have to be permanent.

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