

Best of Last Week—An unusual form of quantum mechanics, biologically powered chip and a drug that stops liver fibrosis

December 14 2015, by Bob Yirka

Biocell attached to CMOS integrated circuit with membrane containing sodium-potassium pumps in pore. Credit: Trevor Finney and Jared Roseman/Columbia Engineering

(ScienceX)—It was a big week for physics as a team at Penn State University reported on their [investigation of an unusual form of quantum](#)

[mechanics](#)—called nonassociative, it involves wave functions that do not obey the associative property. A team with members from Universidad Complutense de Madrid – ICMAT, the Technical University of Munich and UCL, proved that [a certain quantum physics problem is unsolvable](#)—and it involves an underlying fundamental question in quantum and particle physics.

Also, a [team of German physicists saw a landmark in their nuclear fusion quest](#)—they generated a super-heated helium plasma inside of a vessel. And another team of international theorists published a paper describing their work on [computing with time travel](#)—they have showed that a quantum computer could solve insoluble problems if it was traveling along "open timelike curves."

In other news, a new law passed in the U.S. allowing commercial extraction of material from the moon led to speculation that the move [might spark an interplanetary gold rush](#). A team at Heriot-Watt University announced the development of [an amazing camera that can see around corners](#)—it is based on laser range-finding technology and light scattered from walls. And a team at the Columbia University School of Engineering and Applied Science announced that they had built [a biologically powered chip](#), by combining a conventional semiconductor based integrated circuit with an artificial lipid bilayer membrane containing ATP-powered ion pumps. Also, a team of neuroscientists at New York University conducted a series of experiments that showed that Noam Chomsky was right, concluding that [we do have a 'grammar' in our head](#). And a combined team of researchers from France and Canada explained [why it's nearly impossible to separate two interleaved phonebooks](#).

And finally, if you or someone you love is [fighting liver fibrosis, the wound that never heals](#) caused by liver damage (generally brought about by a hepatitis infection, drinking too much alcohol or exposure to certain

toxins or even trauma), good news might be on the horizon as a team of researchers at the Salk Institute has identified a drug that halts the accumulation of scar tissue. It is called JQ1, and the team reports that that in some cases, they actually saw fibrosis reversal when testing it with lab animals.

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