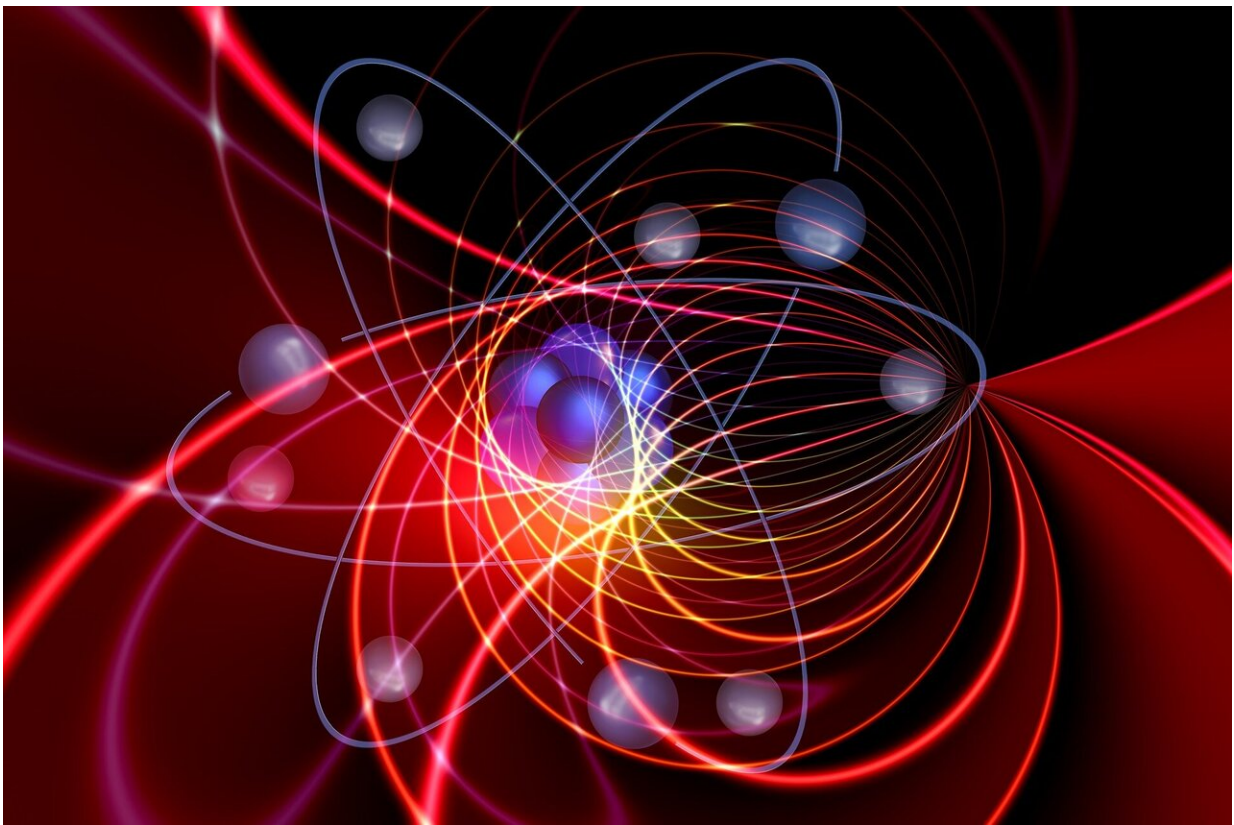


Best of Last Week: Quantum states in everyday electronics, an electric plane and leaky gut breakthrough

December 16 2019, by Bob Yirka



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It was another good week for physics as a team at the University of Chicago's Pritzker School of Molecular Engineering [created quantum](#)

[states in everyday electronics](#)—they found they could create and control high-performance quantum bits in electronic devices made from silicon carbide. And a team at the University of California, Berkeley, found that [heat energy can leap through empty space thanks to quantum weirdness](#)—it involves the Casimir interaction in which heat can leap across several hundred nanometers in a vacuum.

In technology news, a combined team of researchers from Rice University and Amazon reported on [a breakthrough in distributed deep learning](#)—using a divide-and-conquer approach, they showed it was possible to improve online searches. And a team of researchers affiliated with several institutions in the Republic of Korea announced that they had developed [a contact lens that could show when blood glucose levels are high](#). Also, a team at Purdue University announced that they had created [transistors that could both process and store information](#) by using a semiconductor that had ferroelectric properties. And Canadian engineering company magniX, working with Harbour Air announced that their [first commercial electric plane had taken flight](#).

In other news, an international team with members from 50 international organizations found that [Greenland is losing ice seven times faster than in the 1990s](#) due to global warming. They noted also that at its current rate, the melting will lead to 100 million people experiencing flooding by the end of this century. Also, a team at Cold Spring Harbor Laboratory announced that [a key mystery about how the brain produces cognition was finally understood](#)—neurons in the orbitofrontal cortex have distinct functional groups that code for variables such as decision confidence. And a team at Ben-Gurion University of the Negev developed [a new method to remove dust on solar panels](#)—simply by modifying the surface to resemble a lotus leaf.

And finally, if you are someone who suffers from chronic low-grade inflammation of the gut, you may want to check out a study done by a

team at Wake Forest School of Medicine—they found [a dead probiotic strain that showed it could reduce harmful, aging-related inflammation](#) called "leaky gut"—in mice.

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