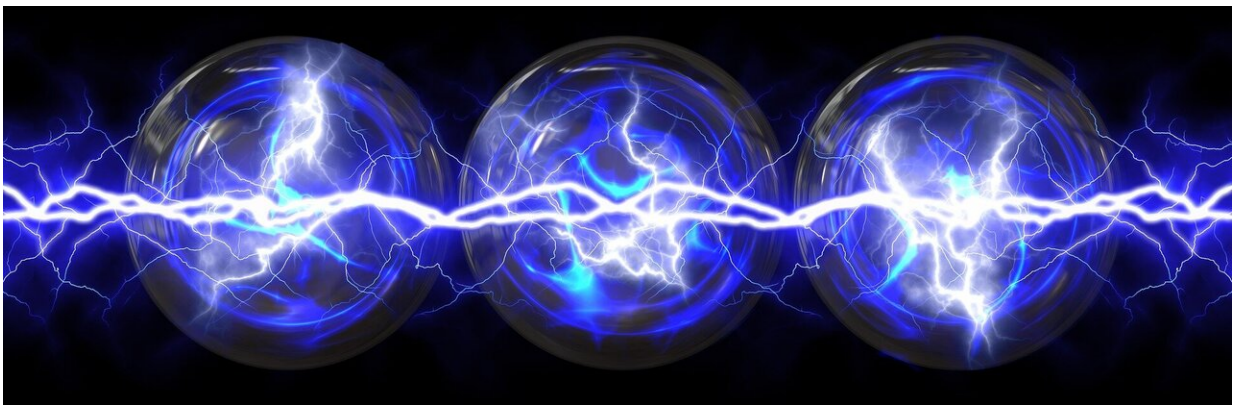


# Best of Last Week: A new state of matter, creating electricity from air, and restrictive diet risks

February 24 2020, by Bob Yirka

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It was another good week for physics as a team of researchers at the University of Chicago used math to propose a theory that [predicts a state of matter could exist that conducts both electricity and energy perfectly](#). Also, a team at the University of Otago conducted a groundbreaking experiment in which they [grabbed and held onto individual atoms](#)—using their technique, they were able to observe previously unseen complex atomic interactions.

In technology news, a team working at EPFL's Laboratory for Applied Mechanical Design in Neuchâtel [confirmed a 50-year-old theory in](#)

[mechanics](#), the so-called "narrow groove" theory has been used in mechanics for more than a half-century despite never having been fully validated. Also, a team at the University of Washington [built a simple, fuel-efficient rocket engine that could enable cheaper, lighter spacecraft](#). And a team at the University of California San Diego developed [a new chip that brings ultra-low power Wi-Fi connectivity to Internet of Things devices](#). They claimed the new chip uses 5,000 times less power than conventional devices. Also, a team with members from Stanford University, MIT and the Toyota Research Institute announced the development of [a new machine learning method that could be used to supercharge battery development for electric vehicles](#).

In other news, a team at the University of Rochester found evidence showing that [old carbon reservoirs are unlikely to cause a massive greenhouse gas release](#)—prior studies had shown that as the permafrost melts, huge amounts of methane would be released into the atmosphere. Also, a team at Pontifical University of Salamanca [identified some of the main factors that lie behind the mental health benefits of mindfulness meditation practices](#). And a team at the University of Massachusetts Amherst developed [a device that uses a natural protein to create electricity from moisture in the air](#).

And finally, if you have been pondering the idea of severely restricting your dietary intake with the hope of extending your lifespan, you might want to first check out a study conducted by a combined team from the Healthy Lifespan Institute at the University of Sheffield and Brown University—they [found that switching fruit flies to a restricted diet and then switching them back to a normal diet shortened their lifespan](#).

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