

Best of Last Week—Making quantum states last longer, new vulnerability for SARS-CoV-2, bad news on Arctic ice

August 17 2020, by Bob Yirka

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It was a good week for physics research, as a team with members from Russia and the U.S. developed [a way to reverse the temporal evolution of an arbitrary unknown quantum state](#)—outlining the mathematical

process of time reversal without an experimental implementation. And a group at the University of Chicago's Pritzker School of Molecular Engineering discovered [a way to make quantum states last 10,000 times longer](#), perhaps opening the door to new advancements in quantum communications, computing and sensing.

In technology news, a team at security company Check Point announced that they had found [an Amazon Alexa bug that exposed voice data](#)—it allowed hackers access to voice historical data and to install Google actions or Alexa skills. Also, computer scientists at UCLA [set benchmarks to optimize quantum computer performance](#) and used it to show that compilers optimized for quantum programs could speed up applications dramatically. And an international team of researchers developed [breakthrough technology that can be used to purify water using the power of sunlight](#). Also, a team at Hewlett Packard Labs developed [a memristor-based Hopfield neural architecture to solve combinatorial optimization problems](#).

In other news, a team with members from the U.S. and the Netherlands found evidence that [a warming Greenland ice sheet has passed a point of no return](#)—the ice sheet will continue to melt even if we solve global warming. Also, a team at Northwestern University exposed [a new vulnerability for SARS-CoV-2](#)—a positively charged site located 10 nanometers from the actual binding site on the spike protein, possibly providing a new treatment pathway. In somewhat related news, a team at the University of Chicago found [a preexisting drug that showed promise in fighting COVID-19](#)—Ebselen, a drug used to treat a wide variety of conditions, from hearing loss to bipolar disorder.

And finally, if you are one of the millions of people around the world who reach for dietary supplements to slow signs of aging, you may want to check out the results of a study done by a team at the University of Minnesota—they found that [at high doses, the popular supplement biotin](#)

[can mask heart trouble.](#)

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