

Best of Last Week – Everlasting quantum coherence, dispelling Rayleigh's curse and eating protein when dieting

October 17 2016, by Bob Yirka

(a) Preparation of two-qubit states in a chloroform molecule that exhibit quantum coherence for an arbitrarily long time. (b) Visual representation and (c)-(f) tomographies of the state dynamics. Credit: Silva et al. ©2016 American Physical Society

(ScienceX)—It was another good week for physics as an international

team of researchers [demonstrated everlasting quantum coherence](#) by conducting experiments that showed that quantum coherence can be preserved for a second or more when exposed to a strong dephasing noise. Another team with Complutense University of Madrid and Palacký University found a way to [dispel Rayleigh's curse](#) by breaking what was believed to be the limit of the distance that can be distinguished with visible light. And another team at Stanford University [found order in a process previously assumed to be random](#)—the way a fluid moves through a tiny funnel and forms droplets as it leaves. A team with Sandia Labs and Harvard University announced that they had created [the first quantum computer bridge](#) consisting of silicon atoms forced into a diamond matrix.

In other news, a team of researchers working at the Department of Energy's Oak Ridge National Laboratory announced that they had developed [nano-spike catalysts that convert carbon dioxide directly into ethanol](#)—an electrochemical process for turning a greenhouse gas into a usable fuel source. And an international team studying data from Hubble found evidence that suggests [the observable universe contains 10 times more galaxies than previously thought](#). A team with members from Rensselaer Polytechnic Institute and Rutgers University found evidence along the New Jersey coastline that suggested that [an extraterrestrial impact preceded an ancient global warming event](#) approximately 55.6 million years ago. And a study conducted by a team at the University of Plymouth found that [people switch their morality in the heat of the moment](#), at least when they are immersed in a virtual reality system. Also, a team at the University of Cambridge devised [a new method for making effective calculations in 'high-dimensional space'](#) and used it to solve a 93-dimensional problem.

And finally, if you are one of the millions around the world trying to lose weight, you might be making it more difficult on yourself if you eat meat and other protein rich foods to stave off hunger as a team with

Washington University School of Medicine found that [a high-protein diet curbs the metabolic benefits of weight loss](#)—because it prevents improvements in insulin sensitivity as people lose weight.

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Citation: Best of Last Week – Everlasting quantum coherence, dispelling Rayleigh's curse and eating protein when dieting (2016, October 17) retrieved 25 April 2024 from <https://sciencex.com/news/2016-10-week-everlasting-quantum-coherence-dispelling.html>

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