

## Best of Last Week – A blow for supersymmetry, a saltwater lamp and sleep found to make memories more accessible

August 3 2015, by Bob Yirka

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An artistic impression depicts the formation of a galaxy cluster in the early Universe, released on October 13, 2014

It was a very interesting week for physics as experiments at the LHC showed that a particle known as the "beauty quark" behaved as has been predicted by the Standard Model and thus represented [a new blow for the "supersymmetry" physics theory](#).

Combining engineering and physics a team at Arizona State University demonstrated [the world's first white lasers](#) by using a thin layer of [semiconductor material](#) to create a nanosheet. And another team working in China demonstrated [the first color-tunable and first graphene-based LED](#)—it is capable of emitting colors across nearly the entire visible spectrum, perhaps marking a major step forward in display technology. Also a team at Virginia Tech found [a way to harvest energy from a beam's self-induced, self-sustaining vibrations in airflow](#)—capturing the kinetic energy in flowing air for such uses as [self-powered sensors](#). Meanwhile another team at Duke University announced that they had set [a new superfast fluorescence speed record](#) by developing a [light-emitting device](#) that can turn on and off 90 billion times a second, possibly laying the groundwork for optical computing. And a startup team at Sustainable Alternative Lighting Corp announced [a saltwater lamp designed to serve people without electricity](#)—based on battery technology, the lamp requires just two tablespoons of salt and a glass of water to provide light for up to eight hours.

In other news, a team of researchers at McMaster University found [a link between intestinal bacteria and depression](#)—certain combinations, they discovered, could lead to both depression and anxiety. And another team built a model [that shows how the surge in wealth inequality in the US may be reversed](#)—mostly, they say, by convincing those that are not top earners to save more. Also a team of astronomers with the University of Geneva announced that they had discovered [a star system with three super-Earths](#)—and another giant—all just 21 light years away in the constellation Cassiopeia.

And finally, if you have ever found yourself having difficulty coming up with a word for something you know or a memory of something you have experienced, it might be tied to your nighttime habits. A team of researchers with the Basque Centre for Cognition, Brain and Language and Exeter University has found that in addition to helping form

memories, [sleep also makes our memories more accessible](#).

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