

# Year in Review—The most important research of 2015: July

December 18 2015, by Bob Yirka

---

This schematic illustrates the novel nanosheet with three parallel segments created by the researchers, each supporting laser action in one of three elementary colors. The device is capable of lasing in any visible color, completely tunable from red, green to blue, or any color in between. When the total field is collected, a white color emerges. Credit: ASU/*Nature Nanotechnology*

*(ScienceX)—In this new monthly series, we are offering summary articles featuring links to some of the most interesting, intriguing or popular stories*

*that appeared on ScienceX throughout 2015. This is the July 2015 edition.*

In physics news, [after an 85-year search, a massless particle with promise for next-generation electronics was found](#) by an international team of researchers—called the Weyl fermion, it has unusual behavior in that it can act as matter and antimatter when inside of a crystal. There was also [a new blow for 'supersymmetry' physics theory](#) as a team of researchers working at the LHC found evidence of an exotic particle named the "beauty quark" that behaves as predicted by the Standard Model. Also [a macroscopic quantum phenomena was discovered in ice](#)—an anomaly at 20K which researchers working in China believe can help explain the simultaneous tunneling of multiple protons.

In technology news, a team of researchers working in China [demonstrated the first color-tunable and first graphene-based LED](#) that can emit colors across nearly the entire visible spectrum. And another team at Arizona State University [demonstrated the world's first white lasers](#), which were more energy efficient and luminous than LEDs. Also a team at Virginia Tech announced that they had discovered a way to [harvest energy from a beam's self-induced, self-sustaining vibrations in airflow](#)—they managed to capture the kinetic energy from the vibrations of a piezoelectric beam inside of a wind tunnel.

In other news a team analyzing image data from the New Horizons' Long Range Reconnaissance Imager revealed [new images of Pluto, revealing geological features](#). And a pair of researchers, Alexei Tkachenko and Sergei Maslov released [a new model that may explain the emergence of self-replication on early Earth](#). It is based on the idea that that the joining of two polymers by use of a third, could have allowed polymers to become self-replicating.

In medical news, a team of researchers working at UC Berkeley found that [the sleep-deprived brain can mistake friends for foes](#)—going

without sleep, they found dulls our ability to accurately read facial expressions. Also, a team at UC San Francisco reported that they were able to [successfully edit human T cells](#) using CRISPR/Cas9, possibly paving the way towards therapies for a host of serious diseases.

*The January 2015 edition of our Year in Review series can be read [here](#).*  
*The February 2015 edition of our Year in Review series can be read [here](#).*  
*The March 2015 edition of our Year in Review series can be read [here](#).*  
*The April 2015 edition of our Year in Review series can be read [here](#)*  
*The May 2015 edition of our Year in Review series can be read [here](#)*  
*The June 2015 edition of our Year in Review series can be read [here](#)*

© 2015 ScienceX

Citation: Year in Review—The most important research of 2015: July (2015, December 18)  
retrieved 28 April 2024 from  
<https://sciencex.com/news/2015-12-year-reviewthe-important-july.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--