Best of Last Week: Possible fifth force of nature found, purifying carbon nanotubes, possible replacement for opiods

August 22 2016, by Bob Yirka

A microscopic sample of barium ions, shown in teal, immersed in a cloud of calcium atoms whose temperature is 1/1,000th of a degree above absolute zero. Credit: University of California, Los Angeles

(Phys.org)—It was another good week for physics as a team at the University of California announced the possible discovery of a fifth

force of nature—which was related to the discovery of a subatomic particle, possibly a protophobic X boson, that defied other explanations. Another team with the U.S. DOE's Brookhaven National Laboratory uncovered the origin of high-temperature superconductivity in copper-oxide compounds—they discovered that it is controlled by the density of electron pairs. And another team at UCLA discovered an 'apparent departure from the laws of thermodynamics'—ions not cooling to the temperature of a surrounding gas as expected.

In technology news, a team at McMaster University announced that they had resolved a problem that has been holding back a technological revolution—they believe they have found a way to purify carbon nanotubes economically. And a team of researchers at MIT suggested that electric vehicles can meet drivers' needs enough to replace 90 percent of vehicles now on the road—which suggests that their limited range is not enough to prevent them from replacing almost all of the gasoline-powered cars being driven today, greatly reducing greenhouse gas emissions.

In other news a combined team from Université de Montréal and McGill University found that legions of nanorobots can target cancerous tumors with precision—by actually doing it. They released bio-engineered bacteria into mice and had them directly target colorectal tumors. In news that may grow more frightening if initial findings prove true, a combined team of researchers with the Rockefeller University and La Jolla Institute for Allergy and Immunology found that a Zika infection may affect adult brain cells—causing damage to cells that serve a repair and replace function for neurons. And a team at Northwestern University discovered that DNA naturally fluoresces—possibly paving the way for super-resolution nanoscopic imaging. And an international team of space researchers announced that they had found evidence that beyond Neptune, a chunk of ice is orbiting the sun in the wrong direction
.

And finally, for the millions of people suffering from chronic pain but who fear becoming addicted to an opioid, a team of researchers from the U.S. and England has announced the discovery of a designer agent that kills pain as well as morphine but may lack overdose risk—it does not cause respiratory suppression, which is how people die from overdoses of opioids.

© 2016 Phys.org

Citation: Best of Last Week: Possible fifth force of nature found, purifying carbon nanotubes, possible replacement for opiods (2016, August 22) retrieved 12 October 2024 from https://sciencex.com/news/2016-08-week-nature-purifying-carbon-nanotubes.html

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.