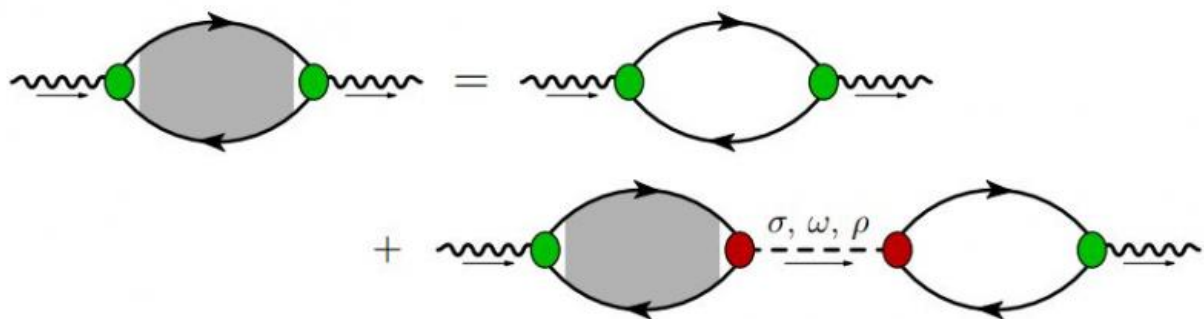


Best of Last Week—Rewriting physics books, new wireless power transfer system and revealing how cancer cells form tumors

February 1 2016, by Bob Yirka



Dyson equation for the nucleon polarization (shaded bubble). For the longitudinal polarization the photon-nucleon vertex is given by the zeroth component of the current operator. Credit: arXiv:1506.05875 [nucl-th]

(ScienceX)—It was a really big week for physics as an international team of researchers explained [why a new physics theory could rewrite the textbooks](#)—they are predicting that under certain conditions, the arrangement of protons could be proven to change inside the nucleus of an atom. Also, a team at the University of Cambridge [solved an apparently impossible problem: How many ways can you arrange 128 tennis balls](#)? They analyzed the problem with a computer program they developed. Also, Joan Vaccaro of Griffith University showed a way to [bring time and space together for universal symmetry](#) in a paper

challenging the presumption that time evolution is an elemental part of nature.

In technology news, a team of researchers at the University of Southern California demonstrated that [carbon dioxide could be captured from the air and directly converted into methanol fuel](#), using a [homogeneous catalyst](#). And another team from Northwestern University and the Korea Institute of Geoscience & Mineral Resources described [a way to increase oil's performance with crumpled graphene balls](#)—the result was an automotive oil additive that outperformed commercial lubricants by 15 percent. Also, a team of scientists in Russia proposed [a high-efficiency wireless power transfer system](#)—they report that they achieved 80 percent transfer efficiency across a distance of 20 centimeters.

In other news, a team of researchers at Oxford University developed [an equation that showed that large-scale conspiracies would quickly reveal themselves](#), which suggests that theories such as the idea that the U.S. faked the moon landings would be revealed in as little as three or four years, if true. A large team of researchers from multiple institutions in the U.S. described a means of [encapsulating pancreatic cells to offer a possible new diabetes treatment](#)—doing so would prevent the immune system from attacking newly injected pancreatic islet cells. And another team at Cornell University announced that they had created [the first self-assembled superconductor](#) in the form of a porous, 3-D gyroidal structure.

And finally, if you or someone you love has been fighting cancer, you might be interested to know that two different teams of researchers at the University of Iowa have solved a major cancer riddle: [How cancer cells form tumors](#)—one more small step in preventing tumors from forming or toward improving ways to make them go away.

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Citation: Best of Last Week–Rewriting physics books, new wireless power transfer system and revealing how cancer cells form tumors (2016, February 1) retrieved 5 July 2025 from <https://sciencex.com/news/2016-02-weekrewriting-physics-wireless-power-revealing.html>

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