

Best of Last Week—Nobel prizes awarded, harnessing energy from a breeze, primordial molecules form peptides

October 10 2022, by Bob Yirka

NTU Professor Yang Yaowen demonstrating how the device can generate and store electricity when exposed to a breeze generated by a wind tunnel. Credit: Nanyang Technological University

It was a good week for physics and chemistry as Nobel prizes were [awarded to Alain Aspect, John Clauser and Anton Zeilinger](#) for proving

that tiny particles can retain a connection with one another even when separated—they were the first to prove that entanglement exists. Another trio, [Carolyn Bertozzi, K. Barry Sharpless and Morten Meldal](#) won the chemistry prize for their work involving "click chemistry," allowing for new ways to explore a wide range of research endeavors.

In technology news, a team at Nanyang Technological University, designed and built [a low-cost device to harness energy from the wind](#), even gentle breezes, and it can also store that energy in a battery. And a team of researchers from Heriot-Watt University, University Paul Sabatier and the University of Sussex, respectively, developed [an AI-based device equipped with a laser that could be used to shoot and kill roaches automatically](#). Also, a pair of researchers at the University of Houston, Sina Jafari Ghalekohneh and Bo Zhao, developed [a solar harvesting system with the potential to generate solar power 24/7](#). They proposed a nonreciprocal solar thermophotovoltaic system that uses an intermediate layer having nonreciprocal radiative properties. And a combined team from Pohang University of Science and Technology and Ulsan National Institute of Science and Technology, developed [an EV battery that can run for 630 km on a single charge](#).

In other news, a team at Hokkaido University found that [use of commercial mouthwashes could reduce SARS-CoV-2 loads in the mouth](#), possibly reducing the degree of symptoms experienced by those infected. And a team with members from the University of Copenhagen, Instituto de Física Fundamental IFF-CSIC and Ruhr-Universität Bochum, devised [a new method to enable efficient interactions between photons](#)—possibly leading to a breakthrough in prevention of propagation loss when sending qubits over long distances. Also, a large study conducted in the U.S. confirmed that [mRNA boosters extend COVID-19 protection but wane over time](#). And finally, a team at Purdue University demonstrated that [primordial molecules, simple amino acids, can spontaneously form peptides](#)—the building blocks of life.

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