

### **'Nanowood' Invention Could Reduce Humanity's Carbon Footprint**

[Scientists at the University of Maryland in College Park](#) have designed a heat-insulating material made from wood that is both light and strong and made entirely from tiny, stripped-down wood fibers. The so-called nanowood, described in the journal Science Advances, could one day be used to make more energy-efficient buildings. It's cheap and biodegradable, too.

### **New Dual-Atom Catalyst to Yield Clean Energy by Artificial Photosynthesis**

[To efficiently harvest solar energy, scientists](#) from the U.S. and China have synthesized a dual-atom catalyst to serve as a platform for artificial photosynthesis, the team reported in the Proceedings of the National Academy of Sciences. Experiments revealed the catalyst to be a well-defined structure, capable of serving as a productive platform for future research on solar fuel synthesis.

### **Scientists Manipulate Crops to Need Less Water**

[By altering a gene found in all plants, a group of scientists](#) has found a way to improve how crops use water by 25 percent. The Realizing Increased Photosynthetic Efficiency (RIPE) project scientists have found that increasing the levels of a photosynthetic protein (PsbS) that is present in all plants prompted plants to partially close their stomata—the microscopic pores in the leaf that allow water to escape.

### **Novel Reusable Sponge to Revolutionize Ocean Oil Spill Cleanup**

[Oleo Sponge, a newly created absorbent for cleaning up oil spills](#) and the oil can be recovered afterwards. The technology—designed by scientists at Argonne National Laboratory—can capture 90 times its own weight in oil from both above and below the water's surface, and is reusable. The Oleo Sponge is created out of polyurethane, a common, inexpensive material.

### **Seismologists Introduce New Measure of Earthquake Ruptures**

[A team of seismologists has developed a new measurement](#) of seismic energy release that can be applied to large earthquakes. Called the Radiated Energy Enhancement Factor (REEF), it provides a measure of earthquake rupture complexity that better captures variations in the amount and duration of slip along the fault for events that may have similar magnitudes.

### **Scientists Unveil High-Sensitivity 3-D Technique Using Single-Atom Measurements**

[Researchers at Griffith University](#) working with Australia's Commonwealth Scientific and Industrial Research Organisation (CSIRO) have unveiled a stunningly accurate technique for scientific measurements using a single atom, with sensitivity down to 100 zeptoNewtons. Scientists have been able to detect position displacements with nanometre precision in three dimensions.

### **Marine Exploration Sensing with Light and Sound**

[Oceanic sensor networks that collect and transmit high-quality](#), real-time data could transform our understanding of marine ecology, improve pollution and disaster management, and inform the multiple industries that draw on ocean resources. A King Abdullah University of Science and Technology (KAUST) research team is designing and optimizing underwater wireless sensor networks that could vastly improve existing ocean sensing equipment.