

### **Light-powered soft robots could suck up oil spills**

[Researchers dubbed the film Neusbot after neustons](#), a category of animals that includes water striders. These insects traverse the surface of lakes and slow-moving streams with a pulsing motion, much like scientists have been able to achieve with the Neusbot, which can move on any body of water.

### **Getting hydrogen out of banana peels**

[As the world's energy demands increase](#), so does our consumption of fossil fuels. The result is a massive rise in greenhouse gases emissions with severely adverse environmental effects. To address this, scientists have been searching for alternative, renewable sources of energy. A main candidate is hydrogen produced from organic waste, or biomass, of plants and animals. Biomass also absorbs and stores CO<sub>2</sub> from the atmosphere, while biomass decomposition can lead to negative emissions of greenhouse gas removal.

### **Fungi may be crucial to storing carbon in soil as the Earth warms**

[Soils are a massive reservoir of carbon](#), holding about three times as much carbon as Earth's atmosphere. The secret behind this carbon storage are microbes, such as bacteria and some fungi, which transform dead and decaying matter into carbon-rich soil. But not all carbon compounds made by soil microbes are equal. Some can last for decades or even centuries in the soil, while others are quickly consumed by microbes and converted into carbon dioxide that's lost to the atmosphere.

### **Viral proteins join forces to lower plants' defense 'shields'**

[New research, led by Washington State University scientists, into how viral proteins interact](#) and can be disabled holds promise to help plants defend themselves against viruses -- and ultimately prevent crop losses. The study found that viral proteins interact with each other to help a virus hijack its host plant and complete its life cycle. When some of these viral proteins were disabled, the researchers found that the virus could not move from cell to cell

### **Corals may store a surprising amount of microplastics in their skeletons**

[A surprising amount of plastic pollution in the ocean](#) may wind up in a previously overlooked spot: the skeletons of living corals. Up to about 20,000 metric tons of tiny fragments called microplastics may be stored in coral skeletons worldwide every year, says ecologist Jessica Reichert of Justus Liebig University Giessen in Germany. That corresponds to nearly 3 percent of the microplastics estimated to be in the shallow, tropical waters where corals thrive.

### **Increase in marine heat waves threatens coastal habitats**

[Heat waves, like the one that blistered the Pacific Northwest last June](#), also occur underwater. A new study in *Frontiers in Marine Science* paints a worrisome picture of recent and projected trends in marine heat waves within the nation's largest estuary, with dire implications for the marine life and coastal economy of the Chesapeake Bay and other similarly impacted shallow-water ecosystems

### **Lithium-ion batteries made with recycled materials can outlast newer counterparts**

[Using shredded spent batteries](#), Wang and colleagues extracted the electrodes and dissolved the metals from those battery bits in an acidic solution. By tweaking the solution's pH, the team removed impurities such as iron and copper and recovered over 90 percent of three key metals: nickel, manganese and cobalt. The recovered metals formed the basis for the team's cathode material.