

### **New Technique Synthesizes Nanographene on Metal Oxide Surfaces**

[Researchers at Friedrich-Alexander-Universität](#) have found a method of forming nanographenes on metal oxide surfaces. Their research, conducted within the framework of collaborative research centre 953—Synthetic Carbon Allotropes funded by the German Research Foundation (DFG), has now been published in the journal *Science*. Its features make it attractive for nanoelectronic applications.

### **Separate Oil and Water for Environmental Remediation and Wastewater are Discovered**

[In a research paper published on March 22-](#) the United Nations-designated World Water Day- engineers and physicists from Tufts describe how they devised a low-cost membrane capable of rapidly filtering oil from water and oil mixtures without the membrane getting fouled. The advance in material science could be a game changer against pollution, particularly for cleaning up large oil spills.

### **Researchers Create Hydrogen Fuel from Seawater**

[Stanford researchers](#) have devised a way to generate hydrogen fuel using solar power, electrodes and saltwater from San Francisco Bay. The findings, published March 18 in *Proceedings of the National Academy of Sciences*, demonstrate a new way of separating hydrogen and oxygen gas from seawater via electricity. Existing water-splitting methods rely on highly purified water, which is a precious resource and costly to produce.

### **How the Humble Marigold Outsmarts a Devastating Tomato Pest**

[Researchers from Newcastle University's](#) School of Natural and Environmental Sciences conducted a study to prove that marigolds repel tomato whiteflies. Publishing their findings today in the journal PLOS ONE, the experts have identified limonene- released by marigolds- as the main component responsible for keeping tomato whiteflies at bay. The insects find the smell of limonene repellent and are slowed down by the powerful chemical.

### **Welding Breakthrough Could Transform Manufacturing**

[Scientists from Heriot-Watt University](#) have welded glass and metal together using an ultrafast laser system, in a breakthrough for the manufacturing industry. Various optical materials such as quartz, borosilicate glass and even sapphire were all successfully welded to metals like aluminum, titanium and stainless steel using the Heriot-Watt laser system, which provides very short pulses.

### **Light from an Exotic Crystal Semiconductor Could Lead to Better Solar Cells**

[Scientists have found a new discovery](#) involves crystals called hybrid perovskites, and they have shown great promise for use in solar cells. The finding could also lead to novel electronic displays, sensors and other devices activated by light and bring increased efficiency at a lower cost to manufacturing of optoelectronics, according to Rutgers-led study in the journal *Materials Today*.

### **Researchers Develop “Acoustic Metamaterial” that Cancels Sound**

[Boston University researchers](#) released a paper in Physical Review B demonstrating it's possible to silence noise using an open, ringlike structure, created to mathematically perfect specifications, for cutting out sounds while maintaining airflow. The shape of acoustic-silencing metamaterials, based on their method, is also completely customizable.