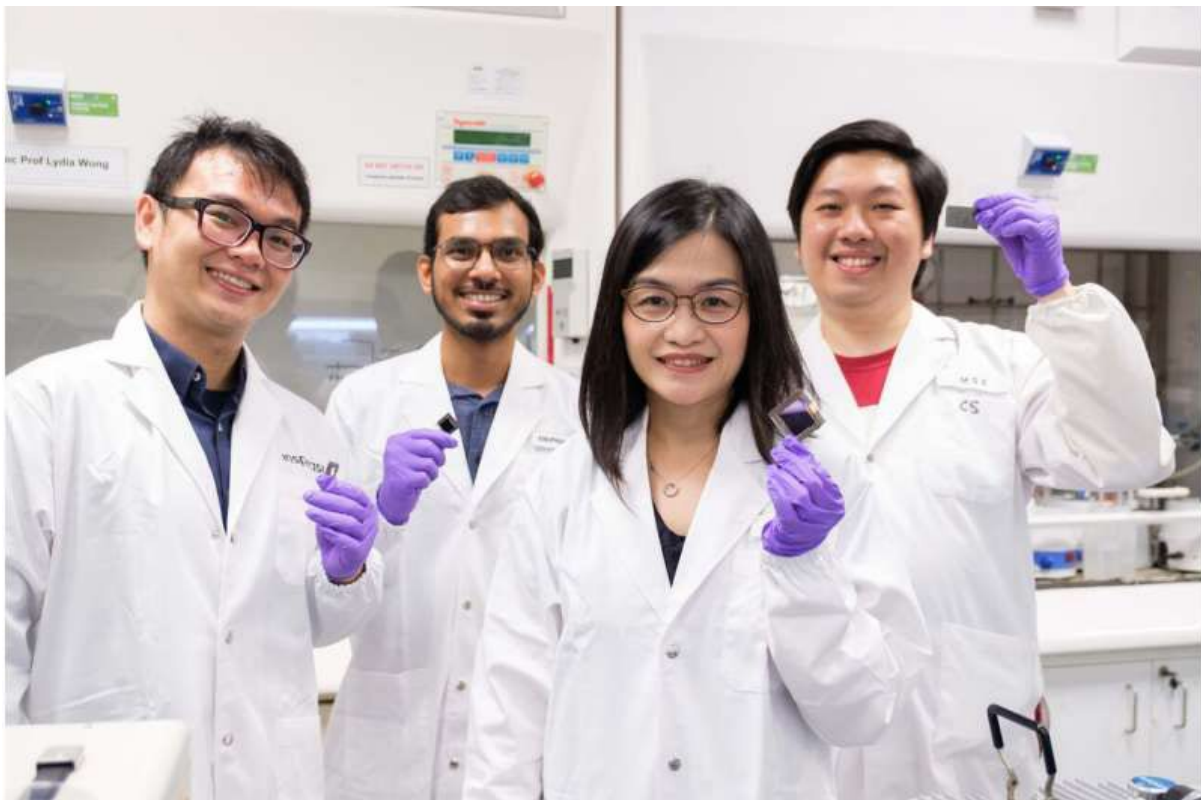


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Artificial Leaf: Hydrogen from Dirty Water Under the Sun

Scientists from Nanyang Technological University in Singapore have unveiled a development capable of generating clean hydrogen from seawater using only solar energy.



Scientists from Nanyang Technological University in Singapore have unveiled a development capable of generating clean hydrogen from seawater using only solar energy. The novelty of the solution lies in the fact that the device simultaneously neutralizes hydrazine – an extremely toxic substance often found in industrial wastewater. This is not just another attempt to obtain hydrogen fuel; the technology solves a dual problem: the production of renewable energy and the purification of polluted water bodies.

The device operates on the principle of an "artificial leaf," absorbing sunlight and initiating photocatalytic reactions. These reactions split water into hydrogen and oxygen, and also decompose hydrazine into harmless components. This approach breaks the old notion of hydrogen production, which often requires clean water and is

associated with the generation of harmful waste. Now, dirty seawater can become a source of clean fuel while simultaneously getting rid of dangerous pollutants.

The potential of this approach is enormous. It opens the way to creating more accessible and environmentally friendly methods of obtaining hydrogen, which can be used in transport and industry. Simultaneously, the technology offers a solution for cleaning water bodies polluted by industrial waste, which is particularly relevant for regions with developed chemical industries. Imagine coastal areas where, instead of oil slicks and toxic emissions, there is clean fuel and a restored ecosystem.

The device is still in the laboratory development stage, but its operating principle demonstrates how scientific research can lead to the creation of technologies that simultaneously solve energy and environmental problems. This is a step towards a future where energy production does not harm the environment but helps to restore it. Perhaps soon we will see entire fields of such "leaves" quietly working for the good of the planet.

<https://smartproto.net/en/articles/artificial-leaf-hydrogen-from-dirty-water-under-the-sun>