

# Recycling industrial waste water: Scientists discover a new method of producing hydrogen

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A research group composed of Dr. Martin Prechtel, Leo Heim and their colleagues at the University of Cologne's Department of Chemistry has discovered a new method of generating hydrogen using water and formaldehyde. The generation of hydrogen from liquids is of particular interest when it comes to fuel cell technologies. The results of the project, entitled "Selective and mild hydrogen production using water and formaldehyde", have recently been published in the journal *Nature Communications*.

Among other applications, the new approach can be used to recycle industrial waste water contaminated by [formaldehyde](#) to break down the contaminants whilst simultaneously generating hydrogen. With the aid of this method, it is possible to reclaim an important raw material from industrial waste water. Prechtel and his colleagues have also identified an air-stable and robust catalyst that can be employed with the technique. The researchers have already filed a corresponding patent application.

Formaldehyde is one of the most important raw materials used in chemical engineering; around 30 million tonnes of the substance are produced annually around the world. It is therefore available as a source of hydrogen in large quantities and at low cost.

**More information:** Selective and mild hydrogen production using water and formaldehyde, *Nature Communications* 5, Article number:

3621 [DOI: 10.1038/ncomms4621](https://doi.org/10.1038/ncomms4621)

Provided by University of Cologne

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