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Can hydrogen really become No.1 source of clean energy in the future? Well, still difficult to say but there is definitely a huge potential.

Hydrogen, unlike fossil fuels, burns clean, meaning there are no greenhouse gases that cause climate change and air pollution. This means that from an environmental point of view hydrogen remains one of the best energy sources that would allow switch to clean energy future.

The most recent breakthrough research comes from the scientists in Japan who have successfully split water into hydrogen and oxygen using light and meticulously designed catalysts with almost 100% quantum efficiency.

This gives hope that the scalable, economically viable hydrogen production could be well achievable in years to come.

This method of water splitting by using catalysts and sunlight is called photocatalysis and has been used for achieving a solar hydrogen production for decades. However, previous experiments even failed to achieve quantum efficiency of 50% which makes this new research an exciting prospect.

According to researchers, these better results were achieved by improved catalysts and the main key to improving efficiency was strategic placement of the co-catalysts and preventing defects in the semiconductor.

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Of course, a lot more work is still needed before hydrogen becomes important source of energy but nonetheless this study is definitely the step in the right direction.