

Written by Ned Haluzan

Tuesday, 06 November 2018 09:01

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Many energy experts believe that hydrogen is one of future's top fuels. There are many ongoing researches with the purpose of finding the cleanest and the most efficient way to produce hydrogen. One of the most interesting techniques is water splitting by using the sunlight.

Water splitting by using sunlight is really a form of artificial photosynthesis where sunlight is used to produce hydrogen from water. How does this process work?

First we have water splitting devices that are made of light-absorbing materials. These materials are capable to absorb different parts of the solar spectrum ranging from infrared to ultraviolet light. Once the light is absorbed by these materials it builds an electrical voltage.

The certain amount of voltage is needed to split water into the oxygen and hydrogen. The most commonly used material is of course silicon because silicon solar cells can generate electricity very close to its limit.

It is also important to mention that in most water splitting devices the front surface is usually designed to solar fuels production, and the back surface serves as an electrical outlet.

Using electricity produced by photovoltaic systems has enormous potential and offers the cleanest option to produce hydrogen. It is up to science to make this type of hydrogen production efficient and cost-competitive.