

USE OF HYDROGEN AND FUEL CELLS IN AEROSPACE APPLICATION

Which are the most common problems in Space exploration?

When the human being first went out of the Earth, he was able only to send small objects as satellites in order to observe our planet by another point of view. Then, in the 1969, we finally managed in sending three men outside of the atmosphere, to the Moon.

With this awesome mission, we start facing with lot of problems. An artificial object doesn't need to feed, to sleep etc, but a man has to. This means that when a spacecraft will depart from the Earth, it has to carry a lot of stuffs, and more they are, heavier it is. Obviously the weight is a huge problem in this kind of missions as you have to go out of the atmosphere and this is not an easy action.

Moreover it has to be considered that, when in space, a human being has to drink, the energy in the spacecraft has to be renewed and produced continuously in order to make it properly working. Hydrogen fuel cells can exactly do this, with a production of energy and a rejection of pure water that, adding some minerals, can be used by astronauts for living.

Hydrogen is an element that is being widely used in aerospace and Earth application as it is one of the most efficient way to produce energy compared to the raw materials used to make the reaction.

As said in the NASA's website regarding the use of hydrogen in the space: "On the space station, water is split into oxygen for breathing and hydrogen. In the future, hydrogen will be recombined with exhaled carbon dioxide for water renewal. Generating and recycling hydrogen in space will decrease the cost and complexity of remote missions by reducing the need for supplies delivered from Earth."

References:

- <https://www.nasa.gov/content/space-applications-of-hydrogen-and-fuel-cells>