

HYDROGEN AND ITS ENERGY POTENTIAL

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Currently, there are many ways to produce hydrogen, but there are three main technological schemes: steam reforming of methane, electrolysis of water and pyrolysis [2]. Steam reforming is the catalytic conversion of hydrocarbons in the presence of water vapor. Its main advantage is cheapness, and its drawback is high carbon dioxide emissions. Water electrolysis is the process of decomposition of water into oxygen and hydrogen due to the constant action of an electric current. The advantages are the use of water, automation of the production process and the absence of polluting emissions. Disadvantage is the production of hydrogen is much more expensive than during reforming [1]. Methane pyrolysis is a process of decomposition of natural gas. The advantage is lower energy consumption in production compared to electrolysis and steam reforming.

Speaking about the main prospects for the use of hydrogen in the electric power industry, two main directions of its development can be distinguished: load balancing and use of hydrogen in the electric power industry as a coolant in the composition of a methane-hydrogen mixture fed to a gas turbine.

To sum up, today there is a sufficiently developed and viable infrastructure of hydrogen energy. Hydrogen in the foreseeable future should help us with the inevitable problem of lack of natural resources and the problem of climate change on our planet.

References

1. Hydrogen energy: myths and reality [Electronic resource]. – Mode of access : <https://clck.ru/Xh5nx>. – Date of access : 10.09.2021.
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