

with another copper oxide - CuO. During the experiments in the laboratory, it was found that if these rods were immersed in water saturated with CO<sub>2</sub> and then irradiated with sunlight, then a photoelectrochemical reaction begins, which leads to the release of methanol. The new process is safer, simpler and less expensive than all previous greenhouse gas conversion methods: you just need to submerge the array of copper nanorods in the water.

But methanol is poisonous, and we cannot talk about the complete safety of the new technology only if reliable water is cleaned from methyl alcohol.

Nevertheless, the advantages of copper nanorods over similar modern developments are enormous.

First of all, cocatalysts, high pressure and temperature, the use of toxic or rare-earth metals are not required.

At the same time, copper nanorods demonstrate a 95% conversion efficiency of CO<sub>2</sub> to methanol without significant energy costs.

A cheap way to convert carbon dioxide to methanol can open up completely new opportunities in the energy and chemical industries since methanol is used not only as a fuel raw material but also as a starting material for the production of plastics, adhesives, and solvents.

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**УДК 539.14**

### UNLIMITED CLEAN ENERGY DREAM

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Our world is such that in it the existence of something infinite and ideal seems impossible. And this also applies to our planet. What happens when all the resources available to us will be exhausted? As American scientists asserted, they found an endless source of pure and free energy.

Nuclear fusion is the production of all chemical elements that exist in the Universe, from one or two simple atomic nuclei. It is believed that nuclear fusion occurred due to the release of a large amount of nuclear energy during cosmogenesis. It still continues on the Sun and on other stars. Repeated nuclear fusion reactions explain the origin of most chemical elements, ranging from hydrogen and helium to iron. Chemical elements that are heavier than iron can be explained by repetitive reactions involving the capture of neutrons by the nuclei.

Nuclear fusion is the be-all and end-all source of energy because, in theory, it's practically unlimited and has almost no downside. It doesn't put carbon into the atmosphere like the burning of fossil fuels or generate radioactive waste like nuclear fission, which is the technology in current nuclear power plants. And the key to reducing losses and increasing production - a new type of powerful magnets, a key component of fusion reactors. The magnets create a field to hold the fusion reaction in place without it touching anything solid - thus solving the meltdown problem. In the

past, it took lots of energy to power the magnets. The new magnets created by the collaborators, however, are smaller and need less energy. This means that, for the first time, their system produces more energy than it consumes. *MIT* and *Commonwealth Fusion Systems* (US private company) plan isn't pure theory - they've raised \$50 million from Italian power company *Eni* to actually build a reactor. Their fusion experiment, called *Sparc*, will produce enough energy to power a small city.

During this time, governments around the world poured billions of dollars into their projects/efforts. All interested in the researchers are waiting for the results - some with a hope of the success of science, some with lust from future dividends. It's no joke: humanity will receive a source of extremely cheap, environmentally friendly, practically inexhaustible energy. This little thing can power an apartment and a factory, a car and an airplane, a space rocket, and a sea liner. We must also take into account that work on the creation of special devices are going on in hundreds of laboratories around the world, including in Ukraine, and several groups have already announced the creation of their existing prototypes.

If the history of the science of the merger were summed up in one word, it would be "arrogance." Many great minds were work on this many years ago and working right now. Nuclear fusion is the energy of the future and it always will be.

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УДК [339+004.89]=111

### THEORETICAL ASPECTS OF THE NATURE OF THE ELECTRONIC COMMERCE

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The stimulation of the formation of new economic activity forms took place during the rapid development of the global economy in the conditions of globalization and development of information technologies.

Significant role in this is played by electronic commerce, the formation and development of which is conditioned by the successful conduct of economic activity by all subjects of e-business in the international space. Today, electronic commerce has become not only one of the main areas of the economy, but also an integral part of the economic and social activities of people.

A large number of researchers understand the e-commerce as the form of products trade through information and telecommunication systems, which includes all trade and economic transactions and business processes that directly serve such transactions [3].

Characteristic features of e-commerce compared with the traditional [2]: