

TECHNOLOGIES FOR CREATING MARINE INFRASTRUCTURES BASED ON RENEWABLE ENERGY SOURCES

V.V. Knyazhev, V.V. Loshchenkov

The article is devoted to the creation of marine infrastructures using renewable energy sources in the ocean, such as the thermal energy of the ocean, the energy of the Sun, wind, waves, tides and currents, salinity gradients, biomass. Possible consumers of energy in the ocean are considered, and first of all, these are autonomous uninhabited underwater vehicles (AUV) and buoys with measuring and control equipment, as well as industries, mariculture facilities and fisheries for the extraction of gas, oil and other raw materials in the ocean. Examples of developments in our country and abroad, manufactured and tested marine vehicles that use natural renewable energy sources are given. The energy density in renewable sources is not high, therefore, first of all, devices with low energy costs for propulsion, such as underwater gliders, were developed. Some of these vehicles are mass-produced, and they have carried out long-term missions in the ocean. With the help of installations that convert the energy of tidal currents, consumers are supplied with energy on some islands. Own developments are also considered, which use energy from renewable sources for mariculture complexes, underwater transport complexes and fresh water transports with the provision of energy by mixing the transported fresh water and the surrounding sea water.

Keywords: renewable energy sources, autonomous uninhabited underwater vehicles, Sun, waves, currents, tides, wind, glider.

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About the authors

KNYAZHEV Valery Viktorovich, Ph.D., Laboratory of Energy of Underwater Robotic Systems, Senior Researcher Institute of Marine Technology Problems, Far Eastern Branch of the Russian Academy of Sciences

Address: 690091, Russia, Vladivostok, Sukhanova st., 5a

Scientific interests: research of natural renewable energy flows.

Development of methods, devices and energy complexes on renewable sources for autonomous objects.;

Phone: 8(423)2215545, ext. 511

E-mail: kvv@marine.febras.ru

LOSHCHENKOV Vladimir Vasilevich, laboratory of power engineering of underwater robotic systems, researcher Institute of Marine Technology Problems, Far Eastern Branch of the Russian Academy of Sciences

Address: 690091, Russia, Vladivostok, Sukhanova st., 5a

Scientific interests: research of natural renewable energy flows.

Development of methods, devices and energy complexes on renewable sources for autonomous objects.;

Phone: 8(423)2215545, ext. 511

E-mail: lvv@marine.febras.ru

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