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FUEL CELLS FOR AUV POWER SUPPLY

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It is necessary to increase the duration of autonomous continuous operation of autonomous uninhabited underwater vehicles and their cruising range, therefore, powerful and energy-intensive energy sources are needed to power the on-board instruments and propulsion system of the vehicle. The article examines the possibility of powering autonomous uninhabited underwater vehicles from fuel cells - electrochemical current sources powered by oxygen and fuel, which is currently primarily used as hydrogen. A review of the built and tested autonomous uninhabited underwater vehicles equipped with fuel cells with reagent storage systems: hydrogen and oxygen, and what results were obtained in these tests is made. The different types of fuel cells, their advantages and disadvantages are described. Special requirements for fuel cells for autonomous uninhabited underwater vehicles are given. The characteristics of foreign and domestic fuel cells, which were used in experimental devices and those that are mass-produced and commercially supplied for stationary facilities, land and sea transport, and for air-independent power plants of submarines, are reviewed and analyzed. The relevance of using energy systems with fuel cells for power supply of underwater, surface and aerial autonomous unmanned vehicles is noted.

Keywords: autonomous uninhabited underwater vehicles, AUVs, energy sources, fuel cells, proton exchange membranes, alkaline fuel cells, battery, hydrogen, oxygen.

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