RESEARCH ON THE FRICTION AND WEAR TESTIING MACHINE FOR SIMULATED OCEAN ENVIRONMENT

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ABSTRACT

Materials working in ocean environment usually face problems such as friction, wear and corrosion. Study of tribological properties of materials in seawater is a new field of tribology research, which has important guiding significance for the in-depth exploration and development of the ocean. Laboratory simulation is a common and efficient method for research. However, the lack of reliable commercial test bench restricts the development of these researches.

In response to the requirement of ocean environment friction and wear test, a friction and wear testing machine for simulated ocean environment was designed in this paper. It includes a pressure system, friction and wear system, control system, and auxiliary system, which can change parameters such as liquid medium, atmosphere, temperature, and pressure to achieve reliable friction and wear tests. It could accurately simulate the pressure and temperature of ocean environment, which were closer to the real working conditions. It could adapt to media such as seawater and various mixed gases, and carry out experiment flexibly.

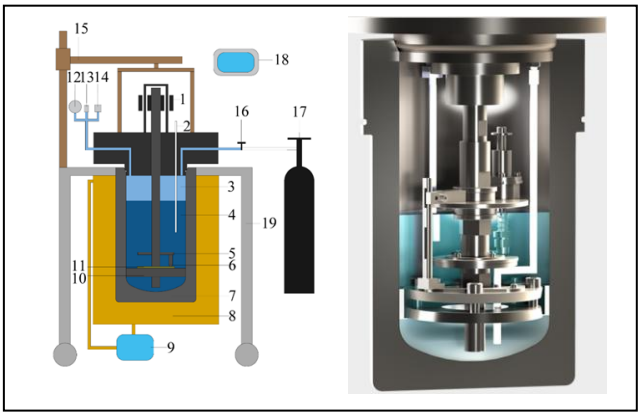

Fig.1 Structure of the friction and wear testing machine

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