

Friction and wear of DLC films in water environment

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From the viewpoint of environmental protection, the water hydraulic systems have been widely noticed. The systems, however, have a lot of tribological problems such as high friction and high wear rate. The diamond-like carbon (DLC) film can be a promising candidate for tribomaterials in water environment.

In this study, the friction and wear of DLC films deposited on WC-Co substrates by a plasma enhanced CVD technique were determined in water and open air using a ball-on-plate type reciprocating friction tester. The friction coefficient of DLC film in water was lower than 0.1 and the value was considerably lower than that in air. The wear rate of DLC films in water was less than half of that in air.

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