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ANALYSIS AND EXPERIMENTAL STUDY ON FRICTION AND WEAR CHARACTERISTICS OF
HIGH-SPEED MECHANICAL SEAL PAIR

Abstract

As the core component of high speed pump in the servo system of launch vehicle,the sealing performance, reliability and wear resistance of the high speed mechanical seal depend not only on the structural design of the seal, but also on the matching of the friction pair materials of the seal face.It design integrated test plan for an seal-pair frictional wear characteristics based ion- implantation seal swiveling ring feasibility study.The friction and wear characteristics of typical graphite used in space field with steel pair were compared by universal friction and wear tester. Based on the effects of linear velocity, face pressure of hard ring on wear volume and friction coefficient were studied. the comprehensive tribological properties of the friction pair is studied by effect factor of load and speed , the tribological properties will be disclosed.This paper introduces mechanical-seal work reliability of temperature stress and system test performance based seal pair ,the application of these plans will offer a reasonable and high effectiveness-cost rate way for life and reliability compliance test of high speed pump.