

Experimental Investigations to Measure Surface Fatigue Wear in Journal Bearing by Using Vibration Signal Analysis

Authors : Amarnath M., Ramachandra C. G., H. Chelladurai, P. Sateesh Kumar, K. Santhosh Kumar

Abstract : Journal bearings are extensively used sliding contact machine elements to support radial/axial loaded rotors used in various applications viz. automobile crankshaft, turbine propeller shaft, rope conveyer, heavy duty electric motors. The primary reasons for the failures of these bearings include unstable lubricant film, oil degradation, misalignment, etc. This paper describes the results of experimental investigations carried out to detect surface fatigue wear developed on load bearing the contact surfaces of journal bearing. The test bearing was subjected to fatigue load cycles over a period of 600 hours. The vibration signals were acquired from the journal bearing at regular intervals of 100 hrs. These signals were post-processed by using the vibration analysis technique to obtain diagnostic information of wear propagated in the journal-bearing system.

Keywords : fatigue, journal bearing, sound signals, vibration signals, wear

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