

Slurry Erosion Behaviour of Cryotreated SS316L Impeller Steel Used for Irrigation Pumps

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Abstract : Slurry erosion is a type of erosion wherein material is removed from the target surface due to impingement of solid particles entrained in liquid medium. Slurry erosion performance of deep cryogenic treatment on impeller steel SS 316 L has been investigated. Slurry collected from an actual irrigation pump used as the abrasive media in an erosion test rig. An attempt has been made to study the effect of velocity of fluid and impingement angle by constant concentration (ppm) on the slurry erosion behavior of these cryotreated steels under different experimental conditions. The slurry erosion wear analysis of cryotreated and untreated steels was done. The slurry erosion performance of cryotreated SS 316L impeller steel has been found to superior to that of untreated steel. Metallurgical investigation, hardness as well as %age of carbide in both types of steel was also investigated.

Keywords : deep cryogenic treatment, impeller, Irrigation pumps SS316L, slurry erosion

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