

Numerical Simulation of Erosion Control in Slurry Pump Casing by Geometrical Flow Pattern Modification Analysis

Authors : A. R. Momeninezhad

Abstract : Erosion of Slurry Pumps in Related Industries, is one of the major costs in their production process. Many factories in extractive industries try to find ways to diminish this cost. In this paper, we consider the flow pattern modifications by geometric variations made of numerical simulation of flow inside pump casing, which is one of the most important parts analyzed for erosion. The mentioned pump is a cyclone centrifugal slurry pump, which is operating in Sarcheshmeh Copper Industries in Kerman-Iran, named and tagged as HM600 cyclone pump. Simulation shows many improvements in local wear information and situations for better and more qualified design of casing shape and impeller position, before and after geometric corrections. By theory of liquid-solid two-phase flow, the local wear defeats are analyzed and omitted.

Keywords : flow pattern, slurry pump, simulation, wear

Conference Title : ICMME 2015 : International Conference on Mechanical and Materials Engineering

Conference Location : Stockholm, Sweden

Conference Dates : July 13-14, 2015