

## عنوان مقاله:

MODELING AND OPTIMIZING THE CORROSIVE WEAR OF STEEL BALLS IN BALL GRINDING MILL

## محل انتشار:

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## خلاصه مقاله:

This paper was aimed to address the modeling and optimization of factors affecting the corrosive wear of low alloy and high carbon chromium steel balls. Response surface methodology, central composite design (CCD) was employed to assess the main and interactive effects of the parameters and also to model and minimize the corrosive wear of the steels. The second-order polynomial regression model was proposed for relationship between the corrosion rates and relevant investigated parameters. Model fitted to results indicated that the linear effects of all of factors, interactive effect of pH and grinding time and the quadratic effects of pH and balls charge weight, were statistically significant in corrosive wear of low alloy steel balls. The significant parameters in the corrosive wear of high carbon chromium steel balls were the linear effects of all factors, the interactions effect of solid concentration, mill speed, mill throughout, grinding time, and the quadratic effects of pH and solid content. Also, the results showed that within the range of parameters studied, the corrosion rate of ۷۸.۳۸ and ۴۰.۷۶ could be obtained for low alloy and high carbon chromium steel balls, respectively.

## کلمات کلیدی:

low alloy steel, high carbon chromium steel, corrosive wear, response surface, modeling and optimizing

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