

Optimization of Wear during Dry Sliding Wear of AISI 1042 Steel Using Response Surface Methodology

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Abstract : The study was emphasised on dry sliding wear behavior of AISI 1042 steel. Dry sliding wear tests were performed using pin-on-disk apparatus under normal loads of 5, 7.5 and 10 kgf and at speeds 600, 750 and 900 rpm. Response surface methodology (RSM) was utilized for finding optimal values of process parameter and experiment was based on rotatable, central composite design (CCD). It was found that the wear followed linear pattern with the load and rpm. The obtained optimal process parameters have been predicted and verified by confirmation experiments.

Keywords : central composite design (CCD), optimization, response surface methodology (RSM), wear

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