

عنوان مقاله:

Data-based Probe for Bearing Balls using Design Expert with Biodegradable Media

محل انتشار:

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خلاصه مقاله:

This paper discusses about the lapping process for both metallic and non-metallic materials. The experiments were carried out based on the RSM design of experiments (DOE) approach to investigate the effect of their parameters on the lapping quality of ball bearing, for predicting the new results. This study explored the modification for fine finishing of bearing balls through Biodegradable medium (Aloe Vera) and silicon carbide (SiC) powder as an abrasive in addition of conventional oil-based media having an advantage like Antioxidant, antibacterial, non-toxic, good compression, and shear stresses. Spindle speed (rpm), Time (minutes), Force (N), Abrasive concentration were considered as the input process variables while the PISF, MRR and surface Roundness was considered as the process response. The result shows the most significant parameter for maximum PISF of 82.3%, 7.6 mg/min MRR and 9.05 μ m roundness was achieved with 672 rpm at 7.5 N force, 37.5% abrasive concentration, 165 minutes .experimental run time, was achieved

کلمات کلیدی:

Biodegradable Material, Design Expert, Lapping Process, Steel Ball Finishing

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