عنوان مقاله:

Optimal flow extraction for the upsetting in a finite element method with using the experiment design and modeling design of fuzzy logic

محل انتشار:

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خلاصه مقاله:

In this research upsetting forming process analyzed by finite element method and Impact of process parameters to damage, process force, and Von Mises Yield criterion was investigated. Then with using the cantor s diagrams, Optimal Amount of parameters is extracted. The finite element model was approved using empirical results and the necessary experiments were designed using the Taguchi method. Initial temperature, friction coefficient and upper mold speed as input variables And Tension And effective strain, the amount of damage, Von Mises surrender criterion as output functions are considered. The modeling results show that the response procedure method with the proper accuracy of the influence of input parameters on the input functions in the procedure, matches the answer. Also, upsetting process optimization with contour diagrams, the optimal range of parameters is shown to reach the desired range. In order to reach the desired range in upsetting process modeling according to the input parameters using fuzzy logic, as one of the powerful tools of modeling has been done. Phase Model Accuracy with The statistical criteria of the measured level are adapted to Cantor charts. Due to Model Design Error Criterion with High accuracy and the closeness of this criterion, this model introduces a high-ending feature. Results obtained from the model with fuzzy logic method and the optimization shows that Cantor charts that obtained from two methods of fuzzy logic and experiment design are highly adaptable.

کلمات کلیدی:

finite elements, Optimization, fuzzy logic, cantor charts, taguchi,

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