عنوان مقاله:

Correcting the stress-strain curve in hot compression test using finite element analysis and Taguchi method

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خلاصه مقاله:

In the hot compression test friction has a detrimental influence on the flow stress through the process and therefore, correcting the deformation curve for real behavior is very important for both researchers and engineers. In this study, a series of compression tests were simulated using Abaqus software. In this study, it has been employed the Taguchi method to design experiments by the factors of material flow curve and the friction coefficient. The compression test was simulated up to the axial strain of ۱ and then the deformation curve was extracted from the force-displacement plot of the strokes. Deviations between the deformation curves and the material flow curves were analyzed using Taguchi approach. Furthermore, the final shape of samples and friction coefficients were logically correlated. As a result, a new method was proposed in order to evaluate the material flow curve, based on the experimental data by the mathematical data manipulation.

کلمات کلیدی:

Hot compression test, Friction, Stress strain curve, Taguchi method

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