عنوان مقاله:

A New Approach for Determining the Optimum Pressure–Time Diagram in Superplastic Forming Process

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خلاصه مقاله:

Superplastic materials show huge amount of deformation in low strain rates and temperature above half of melting point. In superplastic forming, estimating the pressure–time diagram and thickness distribution has significant importance. Utilizing numerical methods, the involved parameters in superplastic forming can be optimized for such estimations. In the present paper, the simulation of superplastic forming of a cup-shape part is demonstrated, assigning the proper constitutive equation. In the following, a noble approach for estimating the pressure–time diagram, using finite element method, is presented and by using this approach, the optimum pressure–time diagram for the forming process is estimated while the effects of process parameters such as friction index and strain rate on pressure–time diagram and thickness distribution is evaluated. Simulation results are compared with other researches results, which show satisfactory agreement.

کلمات کلیدی:

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