## عنوان مقاله:

Numerical and Experimental Research of Deep Drawing Process

## محل انتشار:

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## خلاصه مقاله:

There are mainly two methods of deep drawing analysis; experimental and analytical/numerical. Experimental analysis can be useful in analyzing the process to determine the process parameters that produce a defect free product, and the analytical/numerical modeling can be used to model and analyze the process through all stages of deformation. This approach is less time consuming and more economical. Sheet metal forming often includes biaxial in-plane deformation with non-proportional strain paths. In deep drawing of cylindrical cup, the deformation in the flange in dominated by pure shear deformation, while it changes to plane strain when the material is drawn into the die. This paper deals with the analysis of deep drawing of circular blanks into axi-symmetric cylindrical cup using numerical modeling. The blank drawability has been related both theoretically and experimentally with the initial diameter of the blank and deep drawing parameters. The strains in the radial and circumferential directions have been measured. A correlation on the flange thickness variation by taking into account the work hardening with the analytical .and experimental values also has been searched

## کلمات کلیدی:

Deep drawing cylindrical cup, Sheet Metal Forming, Analytical analysis