

عنوان مقاله:

Developing Analytical Models to Predict the Mechanical Properties of the Nanomaterials Processed by Equal Channel Angular Pressing

محل انتشار:

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خلاصه مقاله:

Prediction of mechanical properties of the materials processed by equal channel angular pressing (ECAP) before experimental procedures has a lot of advantages. Cost savings, obviating the need for test equipments and preventing formidable experimental and numerical procedures by calculating the data needed are the most advantages of analytical methods. In this study two analytical models are developed to foretell the mechanical properties of ECA pressed metals. To investigate the accuracy of each prediction, two aluminum alloys were selected and their predicted mechanical properties were compared with the data obtained from the experimental tests. The results showed that both of the analytical models can reliably be used to determine the mechanical properties of bulk Nanostructured materials produced by ECAP.

کلمات کلیدی:

Aluminum alloys, Analytical analysis, equal channel angular pressing, severe plastic deformation, vickers hardness

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