

## عنوان مقاله:

Effect of Twist Extrusion Process on the Mechanical Properties and Microstructure Evolution of ۷۰-۳۰ Brass Alloy

## محل انتشار:

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## خلاصه مقاله:

In this study, cartridge brass alloy was severely deformed by twist extrusion (TE) technique and its mechanical properties, before and after TE, was investigated using a die with the twist line slope of  $\beta = 30^\circ$ . It was revealed that large strains imposed on the material by this advanced method of severe plastic deformation (SPD) led to a nano-scale ultrafine microstructure and to an enhancement of the mechanical properties. It was revealed that the more TE passes a finer grain sized microstructure obtained. Also, by increasing the number of TE passes, the yield strength and ultimate tensile strength increased. Microhardness test results show that the hardness increases from ۵۵ (initial sample) to ۱۱۰ HV and ۱۴۰ HV in the center and lateral edges of the sample pass #۱ TE, respectively. After six passes .of twist extrusion, the microhardness of the center and lateral edges of the sample reaches ۱۶۰ HV

## کلمات کلیدی:

Severe Plastic Deformation, Twist Extrusion (TE), Cartridge brass, Microstructure Evolution, Mechanical Properties

## لینک ثابت مقاله در پایگاه سیویلیکا:

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