

## عنوان مقاله:

Study on the Microstructure of Hot Deformed Cu-28Zn Prealloyed Powder Compacts

## محل انتشار:

مجله شکل دهی مواد, دوره 7, شماره 2 (سال: 1399)

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## خلاصه مقاله:

The role of microstructure on hot deformation behavior of sintered Cu-28Zn prealloyed powder compacts was investigated by a series of isothermal hot compression tests in the temperature range of 550- 850°C at strain rates of 0.001, 0.01, 0.1 and 0.5 s<sup>-1</sup>, by taking into consideration the Hyperbolic Sine functional behavior to analyze the deformation behavior of the alloy. The results indicate that dynamic recrystallization (DRX) has occurred in a large scale. The DRX nucleation sites are along initial grain boundaries, inside the twin bands and triple junctions. In all stress- strain curves in strains more than 0.2 dynamic recovery (DRV) and DRX take place simultaneously. The effect of strain rate and temperature on dynamically recrystallized grain refinement was investigated. Microstructure is in compliance with the results through the Zener-Hollomon relation and has satisfied hot deformation stress- strain curves. This study may provide a new understanding on hot plastic deformation of sintered prealloyed particles microstructure. The results obtained can be used to develop and optimize the conditions of hot plastic deformation of similar prealloyed powder compact.

## کلمات کلیدی:

Microstructural evolution, Powder metallurgy, Hot compression test, Dynamic recrystallization, Sintered brass

## لینک ثابت مقاله در پایگاه سیویلیکا:

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