عنوان مقاله:

Microstructure and hot deformation behavior of AlMg6 alloy produced by equal-channel angular pressing

محل انتشار:

دومین کنفرانس بین المللی آلومینیوم (سال: 1391)

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خلاصه مقاله:

Experimental work carried out to assess the strain rate and temperature affected deformation behavior of equal-channel angular pressed (ECAPed) AlMg6 alloy. Elevated temperature compression test performed at temperatures ranged from 360 to 520 , four strain rate of 0.001, 0.01, 0.1 and 1s-1. The flow stress curves are displayed two kind of different behavior, which, at low temperatures or high strain rates, during the initial stage of deformation there is an increase in the flow stress, whereas, at high temperatures or low strain rates, flow curve decrease continuously from yield point due to occurrence of dynamic recrystallization phenomena. Activation energy of deformation is calculated 185.5 KJmol-1 for the alloy. Steady state strain rate sensitivity (SRS) parameters were calculated for the strain rate ratios of 1 2 (1:10), 2 3 (10/100). The increasing of the m values from 0.1 to 0.4 for the applied strain rate ratios of 2 3 (10/100) and 1 2 (1:10), respectively, is assumed to be the result of changing the deformation mechanism from recovery to recrystallization. The effects of number of passes and strain path have been studied on the mechanical .and microstructural characteristics of this alloy

کلمات کلیدی:

Hot deformation, ECAP, Dynamic recrystallization, AlMg6 alloy