

## عنوان مقاله:

(DEFORMATION BEHAVIOR OF TWP STEEL DURING SIMPLE SHEAR EXTRUSION (SSE

## محل انتشار:

سومین کنفرانس بین المللی مواد فوق ریزدانه و نانوساختار (سال: 1390)

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## خلاصه مقاله:

In the present study, an Fe-22Mn-3Si-Al TWIP steel is processed through simple shear extrusion (SSE) as a severe plastic deformation method. Dies with two maximum distortion angles of 30 (SSE-30) and 45 (SSE-45) are designed and constructed. The deformation behavior at different locations from the entrance to the exit of the deformation channel is investigated. The dislocation density and the crystallite size at the selected positions are also determined by the X-ray diffraction using the modified Williamson-Hall method. Results show that the hardness reaches to its maximum at the middle of both SSE-30 and SSE-45 channels (by a factor of about 3.3, and 4.1, respectively) compared to the annealed state. The hardness decreases slightly at the second half of the deformation channel. A similar trend is observed for dislocation density from the entrance to the exit channel. One pass of SSE-30 and SSE-45 leads to the crystallite sizes of about 710 nm and 500 nm, respectively.

## کلمات کلیدی:

Severe plastic deformation, Simple shear extrusion, Deformation behavior, Dislocation density

## لینک ثابت مقاله در پایگاه سیویلیکا:

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