

ACHIEVING EXCEPTIONAL GRAIN REFINEMENT THROUGH SEVERE PLASTIC DEFORMATION: NEW DEVELOPMENTS IN PROCESSING TO ATTAIN HOMOGENEITY

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Abstract

Equal-channel angular pressing (ECAP) is now an accepted processing technique for achieving grain refinement to the submicrometer level in bulk metals. However, ECAP is a repetitive and labor-intensive process that is not easily adapted for use in industrial applications. This paper describes the principles of ECAP, the characteristics of the grain refinement and the alternative techniques that are now becoming available such as ECAP-Conform and processing by ECAP using parallel channels.

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