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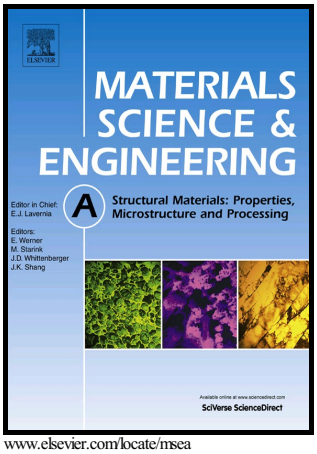

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Abstract

The flow stress behavior of AA6061/B_4C composites has been researched by compression test using Gleeble-3800 thermal simulator, in the temperature ranging from 633-783K and strain rate ranging from 0.001-1s^{-1}. Typical true stress-true strain curves showed that the peak stress levels decreased with the rising of temperature but increased with the rising of strain rates. The combined effects of temperature and strain rate on deformation were analyzed by constitutive equation which containing the Zener-Hollomon parameter (Z) in hyperbolic sine function. The effects of Z values on dynamic softening and associated microstructural evolution during hot deformation were investigated by electron back scattered diffraction technique (EBSD). It was found that with the decrease of Z values, local strain induced by deformation was released and the grain size of aluminum matrix increased gradually, which indicated that the main softening mechanism of

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