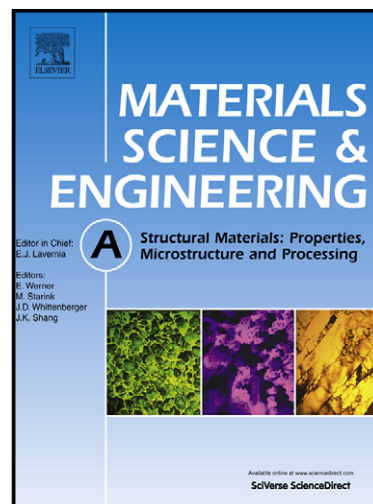


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Shear Localization and Its Related Microstructural Evolution in the Ultrafine Grained Titanium Processed by Multi-axial Compression

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Abstract

Ultrafine grained titanium has unique mechanical properties and attracts tremendous interest due to its scientific and technological application. Shear localization (frequently also denoted as adiabatic shear band) is one of the most important deformation and failure mechanisms for it used at high rate deformation. Hat shaped specimens are used to induce the formation of an adiabatic shear band under controlled dynamic conditions. Unstable shear deformation of the alloy emerges after the true flow stress reaches about 750 MPa, the first vibration peak during the split Hopkinson pressure bar testing, and the whole deformation process lasts about 50

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