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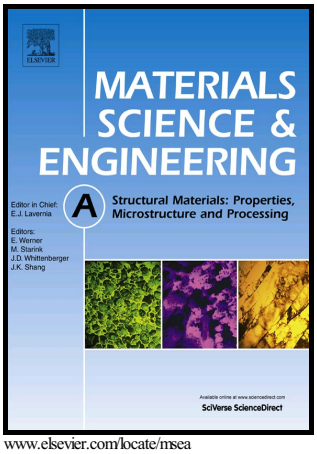

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PII: S0921-5093(16)30026-0
DOI: http://dx.doi.org/10.1016/j.msea.2016.01.026
Reference: MSA33213

To appear in: *Materials Science & Engineering A*

Received date: 10 October 2015
Revised date: 8 January 2016
Accepted date: 8 January 2016

Cite this article as: Fanghua Shen, Danqing Yi, Yong Jiang, Bin Wang, Huiqun Liu, Cong Tang and Wenbin Shou, Semi-quantitative evaluation of texture components and fatigue properties in 2524 T3 aluminum alloy sheets, *Material Science & Engineering A,* http://dx.doi.org/10.1016/j.msea.2016.01.026

Semi-quantitative evaluation of texture components and fatigue properties in 2524 T3 aluminum alloy sheets

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Abstract: Effect of main texture components (Cube, Goss and Brass) on the fatigue property of 2524 T3 (Al−Cu−Mg) aluminum alloy sheet was investigated by means of X-Ray diffraction, electron back scattering diffraction, scanning electron microscopy, transmission electron microscopy and fatigue tests. A new kind of factors, which was based on the intensity ratio of texture components, were firstly defined to evaluate and discuss the relationship between texture components and the fatigue crack growth (FCG) rate semi-quantitatively. The results showed that the rate of FCG in the stable stage (II) decreased with an increase of the factor F_{CGB} (the intensity ratio of Cube to Brass texture) obviously. When the new factor F_{CGB}, F_{CG} (the intensity ratio of Cube to Goss texture), and F_{GB} (the intensity ratio of Goss to Brass texture) all exceeded than 1, as well as F_{CG} was close to F_{GB}, the 2524 T3 sheet exhibited the

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