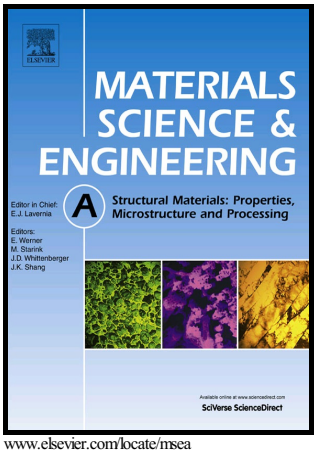

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Evolution of Texture and Asymmetry and its Impact on the Fatigue Behaviour of an In-situ Magnesium Nanocomposite

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Abstract:

A novel in-situ synthesis technique has previously been proposed for the synthesis of magnesium based nanocomposites, by exploiting the thermodynamic reactions, to fabricate nanoparticles in-situ during the melt processing. Although the microstructural aspects of formation of such nanocomposites have been dealt with previously, the implications of the same on the texture and hence on mechanical properties are not certain. In the present work, the evolution of crystallographic texture and its influence on tension-compression asymmetry (Tensile yield strength ÷ Compressive yield strength) and thereby, the impact on fatigue