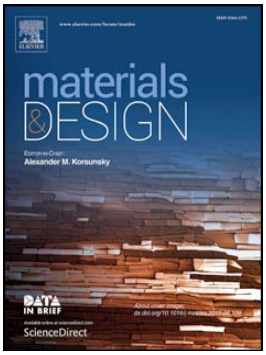

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Near-surface mechanical heterogeneities in a dissimilar aluminum alloys friction stir welded joint

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Abstract

The local mechanical properties of a dissimilar friction stir welded AA-2024-T3/AA-2198-T3 joint were documented during a uniaxial tensile test. High-resolution digital image correlation was performed during monotonic tensile tests to capture the local in-plane strain fields of the heterogeneous macrostructure of the weld. In the shoulder-affected region, banded macrostructures with heterogeneous mechanical properties were found. They were related to pronounced textures regions, which can be associated to strain-rate gradient during