

Characterization of the deformation texture after tensile test and cold rolling of a Ti-6Al-4V sheet alloy

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Abstract: The deformation texture after cold rolling and tensile test of an industrial Ti-6Al-4V sheet alloy was studied using X-ray diffraction. The alloy was subjected to a cold rolling to different thickness reductions (from 20% to 60%) and then tensile tests have been carried out along three directions relatively to the rolling direction (0° , 45° and 90°). The experimental results were compared to the existing literature and discussed in terms of active plastic deformation mechanisms.

Keywords : TA6V, deformation texture, Anisotropy, Lankford