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LASER-ULTRASONIC CHARACTERIZATION OF THE RECOVERY AND RECRYSTALLIZATION OF ALUMINUM ALLOYS

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Previously, we showed that the isothermal recrystallization of aluminum can be monitored *in situ* and inline using laser-ultrasonics. The measurement is based on sensing elastic constants changes caused by crystallographic texture changes. This is now supported by new neutron diffraction measurements of texture. However, there appears to be a small discrepancy between the velocity variations calculated from the neutron measurements and those measured ultrasonically. In addition, the initial stages of the isothermal process display a dependence of the ultrasonic velocity that cannot be explained by texture variations. We will argue that the portion of the ultrasonic signal that cannot be explained by texture variations is caused by an internal friction mechanism, possibly related to recovery.

Oral presentation : yes

Poster presentation : no