

The Tensile Response of an Al-Mg-Sc Alloy

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Despite the high cost of scandium as an alloying element, aluminum-scandium alloys are being explored for many niche applications thanks to the effectiveness of scandium as both a precipitation hardening element and recrystallization inhibitor. In this work we have explored the influence of scandium additions on the microstructure and tensile response of an Al-Mg-Sc alloy. The results of this work will be presented showing how coupled precipitation, yield strength and work hardening models have been developed to explain the mechanical response of both as-aged and recovered microstructures in a self-consistent fashion.
