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Properties of Al-6Mg-*x*Sc (*x* = 0 to 0.6 wt.%) Alloy Subjected to Thermal Treatment: A Review

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Abstract. Aluminum–magnesium alloys are regularly used to manufacture different types of sheets, automotive trims, and architectural components, which are very intricate in shape. Additionally they are important due to their excellent properties of high-strength to weight ratio, corrosion resistance and weldability. Magnesium increases the strength of the alloys but there is a tendency to form β-phase Al8Mg5 compound, usually denoted as Al_3Mg= precipitates along grain boundaries to facilitate intergranular fracture. Numerous studies have been conducted on these alloys to make their use potential as different places. The use of scandium in Al-Mg alloys is meant for taking the advantage of grain refinement along with the unique precipitation strengthening behavior through the formation of Al_3Sc precipitates with aluminum, a stable LI_2 phase coherent with the matrix. The purpose of this paper is to review and discuss recent developments on Al-6Mg alloy through scandium addition at different levels under thermal treatment.

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