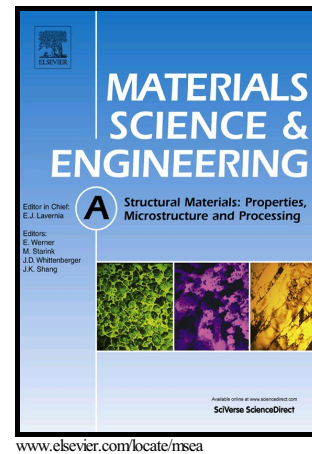


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Abstract:

Present study investigates the role of ultrasonic treatment (UT) on microstructure modification, porosity mitigation and their influence on mechanical properties of Sr modified A356 Al alloy. Addition of Sr in trace amount (500 ppm) to A356 alloy results in reducing the length of eutectic Si from 15.6 μm to 0.65 μm with concomitant increase in porosity from 0.84% to 3.59%. Ultrasonic treatment of Sr modified A356 Al alloy not only helps to retain the modification of eutectic Si (0.57 μm) but reduces the specific porosity volume to 0.86%. The effect of microstructure modification and porosity mitigation reflected in the mechanical properties of A356 Al alloy. While the Sr addition to A356 alloy reduced the tensile properties, UT of the Sr added alloy resulted in improved tensile properties. The mechanism

¹ Deceased on 06.01.2018

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