

Title: Wettability enhancement of sicp in cast A356/SiCp composite using semisolid process

Author/Authors: Hamidreza Ghandvar, Saeed Farahany, Jamaliah Idris

Abstract: The effects of SiCp treatment and magnesium addition on microstructural and mechanical properties of Al356/20 wt% SiCp semisolid composites were investigated. The results showed that cleaning and oxidizing of SiCp and addition of 1 wt% Mg resulted in improving wettability, incorporation, and uniform distribution of SiCp in A356 matrix. Consequently, the ultimate tensile strength (UTS) value increased by 19% and 32% when the SiC was treated and also when Mg was added, respectively, compared to as-received SiCp. In addition, hardness value increased from 69.7 HV in as-received SiCp to 94.8 HV after SiCp treatment and addition of Mg.