

Improvement of Wear Resistance of 356 Aluminum Alloy by High Energy Electron Beam Irradiation

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Abstract : This study is concerned with the microstructural analysis and improvement of wear resistance of 356 aluminum alloy by a high energy electron beam. Shock hardening on material by high energy electron beam improved wear resistance. Particularly, in the surface of material by shock hardening, the wear resistance was greatly enhanced to 29% higher than that of the 356 aluminum alloy substrate. These findings suggested that surface shock hardening using high energy electron beam irradiation was economical and useful for the development of surface shock hardening with improved wear resistance.

Keywords : Al356 alloy, HEEB, wear resistance, frictional characteristics

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