

Effect of Tube Backward Extrusion (TBE) Process on the Microstructure and Mechanical Properties of AZ31 Magnesium Alloy

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Abstract : An experimental investigation into the Tube Backward Extrusion (TBE) process on AZ31 magnesium alloy is studied. Microstructures and grain size distribution of the specimens before and after TBE process are investigated by optical microscopy. Tensile and Vickers microhardness tests along extrusion direction were performed at room temperature. It is found that the average grain size is refined remarkably from the initial 33 μm down to 3.5 μm after TBE process. Also, the microhardness increased significantly to 58 HV after the process from an initial value of 36 HV.

Keywords : tube backward extrusion, AZ31, grain size distribution, grain refinement

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