SHAPE MEMORY EFFECT IN Cu-Sn-Mn TERNARY SHAPE MEMORY ALLOY PROCESSED BY INGOT METALLURGY

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ABSTRACT

Cu–Sn–Mn Shape Memory Alloys in the range of 10-15 wt.% of Tin and 1-5 wt.% of Manganese, exhibiting β-phase at high temperatures and manifesting shape memory effect upon quenching to lower temperatures, were prepared through ingot metallurgy. The alloy ingots were homogenized followed by step quenching so as to obtain a structure that is completely martensitic. They were subsequently characterized by optical emission spectrophotometry, differential scanning calorimetry and optical microscopy. The superelastic properties of the alloys were studied by tensile test. This paper deals with the characterization of the Shape Memory Effect in Cu-Sn-Mn Shape Memory Alloys.

KEYWORDS: Shape Memory Alloy, Cu-Sn-Mn alloy, Shape Memory Effect.