

PREPARATION AND CHARACTERIZATION OF LOW COST Cu-Al-Be SHAPE MEMORY ALLOY FOR AEROSPACE APPLICATIONS

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Abstract

Recently it has been found that a small addition of Beryllium (Be) widens the transformation temperature in Cu-Al based Shape Memory Alloys (SMA), that is particularly interesting in the industrial applications point of view. In this paper, the processing of Cu-Al-Be SMA by gravity die casting technology was described. The specially designed heat treatment procedure was designed to stabilize the SMA effect in this alloy. The DSC curve showed that this alloy has the transformation temperature in the range of 65°C to 120°C, and also exhibits the hysteresis behavior. Microstructure examinations confirmed the presence of lath martensite phases at room temperature. The bend test was used to prove the existence of the shape memory effect in this alloy.

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