Short Communication

Preparation and Property of $\text{Cu}_{50}\text{Zr}_{50-x}\text{Y}_x$ Amorphous Alloy

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Cu-Zr bulk metallic glasses (BMGs) have aroused wide concern recently as they have good glass forming ability, excellent mechanical property, high corrosion resistance and relatively low cost. In this research, different amount of rare earth Y were added in order to improve the glass forming ability of Cu-Zr alloy. The microstructure and glass forming ability of $\text{Cu}_{50}\text{Zr}_{50-x}\text{Y}_x$ ($0 \leq x \leq 4\text{at.}\%$) alloys were analyzed by using X-ray diffraction (XRD) and differential scanning calorimetry (DSC), respectively. The results show that the addition of Y element can enhance the glass forming ability of Cu-Zr-Y alloys. Meanwhile, the mechanical property of Cu-Zr-Y alloys was significantly improved comparing with that of Cu-Zr alloy. The influence of Y element on the corrosion resistance of Cu-Zr-Y alloys was discussed as well.

Keywords: Cu-Zr bulk metallic glasses, Glass forming ability, Mechanical property

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