

## New Method for Producing Bulk Metallic Glasses

In this study, we try to develop a new method for producing the bulk metallic glasses by using electromagnetic vibrations and to clarify a possibility of enhancing glass-forming ability by this process. The effects of the electromagnetic vibrations on the glass-forming ability in the Mg-based bulk metallic glasses were investigated. It was found that the new method by using the electromagnetic vibrations is effective in enhancing the glass-forming ability. Disappearance of the clusters by the electromagnetic vibrations applied to the liquid state was presumed to cause suppression of crystalline nucleation, namely, enhancing the glass-forming ability.

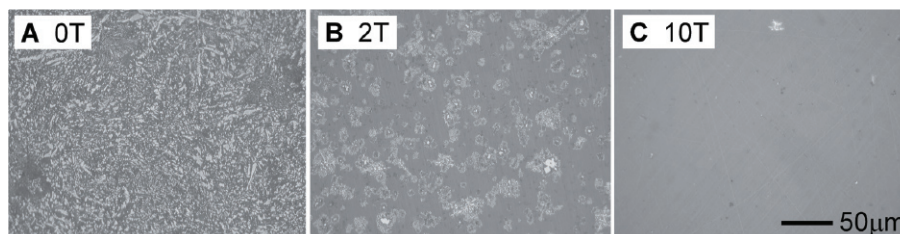


Figure: Optical micrographs for the Mg-based alloys cooled under electromagnetic vibrations with various kinds of intensity. A without the electromagnetic vibrations shows crystalline structures alone. B under the weak electromagnetic vibration force shows both featureless metallic glass structures and crystalline particles. C under the strong electromagnetic vibration force shows featureless metallic glass structures without crystalline particles.

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