

Properties of the metallic glass thin films fabricated by multicomponent single
alloying target and its applications in various industrial fields

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Abstract.

Metallic glass alloys having dense packing structure have short range ordered structure with long range homogeneity. Therefore, they can provide complete corrosion protection and unique electrical properties. Recently, metallic glass thin films have received much attention to extend its application fields combining with PVC coating technologies. The metallic glass thin films can change the surface properties of the conventional bulk materials which need anticorrosion properties. However, multi-component alloying targets are required to fabricate the metallic glass thin films because metallic glass alloys contain more than three elements. Recently, many researchers have been reported the properties of the metallic glass thin films synthesized with multi-cathode systems or amorphous target. But, it is difficult to fabricate the large sized sputtering targets for mass production equipment with high toughness and thermal stability.

In this study, newly developed sputtering target with glass forming ability and the properties of the metallic glass thin films will be introduced with respect to the various application fields such as bipolar plate in PEM fuel cell and decorative coatings for electric device and construction fields.