A Review on the Preparation of Magnesium-Based Alloys Prepared by Powder Metallurgy and the Evolution of Microstructure and Mechanical Properties

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ABSTRACT

This paper reviews the manufacturing of magnesium-based alloys prepared by powder metallurgy (PM) technique and analysis of the effects of PM parameter on the developed microstructure, texture and mechanical properties. Powder metallurgy (PM) technique has been considered to produce magnesium product with consideration of less complex, finer grain and improved mechanical properties. Selection of PM route especially sintering to full densification determines a good diffusion path of alloy for interparticle bonding. This paper discusses the preparation and process parameter of each processes in powder metallurgy route, and the evolved microstructure and mechanical properties of the magnesium-based alloy product.

KEYWORDS

Powder metallurgy; Magnesium alloys; Sintering; Mechanical properties; Grain refinement

DOI: https://doi.org/10.4028/www.scientific.net/KEM.796.3

ACKNOWLEDGMENT

The authors wish to acknowledge the financial support of Universiti Malaysia Pahang research grant, RDU180333.