

Using Fly Ash as a Reinforcement to Increase Wear Resistance of Pure Magnesium

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Abstract : In the current study, fly ash obtained from a thermal power plant was used as reinforcement in pure magnesium. The composite materials with different fly ash contents were produced with powder metallurgical methods. Powder mixtures were sintered at 540^oC under 30 MPa pressure for 15 minutes in a vacuum assisted hot press. Results showed that increasing ash content continuously increases hardness of the composite. On the other hand, minimum wear damage was obtained at 2 wt. % ash content. Addition of higher level of fly ash results with formation of cracks in the matrix and increases wear damage of the material.

Keywords : Mg composite, fly ash, wear, powder metallurgy

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