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Synthesis and Mechanical Behavior of (Al/Sic) Functionally Graded Material Using Powder Metallurgy Technique

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This paper focuses on the Synthesis and mechanical behavior of functionally graded material using powder metallurgy technique. Owing to its low density and high strength to weight ratio, pure aluminum is chosen as matrix. Silicon carbide is selected as reinforcement in view of its hardness. Functionally graded materials (FGM) with 4 layers containing increasing volume fraction of SiC (0%,3%,7%,10%) were sintered at 5800C in inert atmosphere. The microstructure analysis revealed homogeneous mixtures and crack free layers and the mechanical properties hardness and toughness of the FGM attained better results than pure aluminum.

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