Saif Wakeel et al., Int J Mater Sci Res. 2017
http://dx.doi.org/10.18689/2638-1559.a1.004

Wear and Microstructural Behavior of SiC-B_4C Reinforced Aluminium Metal Matrix Composite via Powder Metallurgy Technique

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Aluminium Composites has wide application in Automobile such as design of four wheeler rim, aerospace, sports, Machines etc. the problem associated with Aluminium alloy is their low wear resistance during machining therefore an attempt is made to improve the wear properties of pure Aluminium by reinforcing it with hybrid ceramic such as SiC-B_4C. In this research pure Al and Al with hybrid reinforcement of SiC-B_4C are fabricated using powder metallurgy technique. 10 billets i.e. Pure Al, Al-3wt%SiC7wt%B_4C, Al-5wt%SiC5wt%B_4C and Al-7wt%SiC3wt%B_4C are compacted with compaction loads of 3, 4 and 5 Ton and then Sintered near the melting point. Physical properties such as density, porosity, XRD and wear properties are calculated. On progressive addition of SiC-B_4C , significant enhancement in physical and wear properties are obtained. Effect of Compaction load on wear property is also illustrated in this research.

Key Words: Metal Matrix Composite (MMC), green density, sintered density and P.M

Biography:

Saif Wakeel feels proud to pursue Final year Mechanical engineering from Aligarh Muslim University, Aligarh, India. Recently he has written a Book “Fabrication and Mechanical properties of Aluminium Composites”. He has successfully completed his internship from National University of Singapore, in specific area of Nanomaterials.