International Journal of ChemTech Research
CODEN (USA): IJCRGG ISSN: 0974-4290
Vol.9, No.01 pp 268-274, 2016

Experimental Investigations on Material Characteristics of IN-SITU AL 6082- TIB_2 Composites

Anand partheeban C M[1]*, M.Rajendran[2], Gokul.M[1]

[1]Faculty of Mechanical Engineering, United Institute of Technology, Coimbatore, India
[2]Faculty of Mechanical Engineering, KGISL Institute of Technology, Coimbatore, India

Abstract: Aluminium based metal matrix composites (MMCS) are advanced materials having the properties of high specific strength and modulus, greater resistance, high elevated temperature and low thermal expansion co efficient. These composites are widely used industries like aerospace, defence, automobile, biomaterials as well as sports etc. In present work aluminium alloy reinforced with TiB_2 MMCs materials are prepared by using stir casting technique have cost advantages over the composites made by other. For Producing TiB2, two halide salts namely KBF4 and KTiF6 are used. Two different volume fractions (0% and 9%) of particulate TiB_2 are used in production of aluminium matrix composite at 750°C. An X-ray diffract meter is used to confirm the presence of TiB_2 as well as to estimate quantitatively the weight percentage of TiB_2 particles in the composite for the various reaction holding times. Microstructures of the composites are studied by Scanning Electron Microscopy (SEM). The Mechanical property of the metal matrix composites was studied. The addition of TiB_2 particles results in increased mechanical properties, such as tensile and hardness.
Key words: Metal matrix composites; Aluminium; TiB_2 and Stir casting.

Anand partheeban C M *et al* /Int.J. ChemTech Res. 2016,9(1),pp 268-274.

*****