



Heat Treatment of Al/TiB₂ MMC with Different Moulds

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Abstract:In this work, A356 cast aluminium alloy with 6% TiB₂ in-situ formed MMCs have been fabricated using stir casting route and poured at sand and permanent moulds. The composite was synthesized using stir casting technique. The A356 cast aluminium alloy and all synthesized composites are subjected to solutionizing treatment at a temperature of 540°C for one hour, followed by quenching in hot water at 43°C. The quenched samples are then subjected to artificial aging at 171°C for 8 hours. Morphology of the cast composites was studied in detail by the optical microstructure. The Mechanical properties have been carried over on both sand and permanent of Al/TiB₂ MMC composites before and after heat treatment. Under heat treated condition, Al/TiB₂ composites showed better tensile strength and hardness when contrasted with base Al matrix alloy. And different moulds were investigated and its comparison shows that the tensile and hardness value of Al/TiB₂ MMC is higher than permanent mould.

C.Rajaravi et al /International Journal of ChemTech Research, 2018,11(07): 78-83.

DOI= <http://dx.doi.org/10.20902/IJCTR.2018.110710>
