

ABSTRACT

In this study the effect of particulate reinforcement to latent heat generation and solid fraction during solidification of metal matrix composite is investigated. Permanent casting using copper mould is employed for specimens fabrication. Solidification data during the casting process is acquired and studied using Fourier thermal analysis (FTA) to calculate the latent heat generation and solid fraction. In this study latent heat and fraction solid are obtained by performing calculations based on Fourier thermal analysis technique. The results show that when volume fraction of particulate reinforcement is increased, the fraction solid rate is faster and the latent heat generation during solidification decreased. It is concluded that as more particulate reinforcement is added, it promotes faster solidification during the casting process.

Keywords: Metal matrix composite (MMC), Permanent (copper) mould, Fourier thermal analysis (FTA), Latent heat, Solid fraction