

Pengaruh penambahan partikel SiC terhadap sifat mekanik komposit aluminium A356/SiC melalui proses pengecoran aduk = Effects of SiC particles additon to mechanical properties of composite aluminium A356/SiC fabricated by stir casting method

Tiin Zhakiah, author

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Abstrak

[Komposit paduan aluminium A356 berpenguat silikon karbida memiliki potensi untuk memiliki sifat mekanik yang baik dengan massa yang rendah. Pada penelitian ini, pengecoran dilakukan melalui metode pengecoran aduk dengan menambahkan silikon karbida dengan presentase 2%, 5%, 8%, 10% dan 15% fraksi volume ke dalam matriks, serta penambahan magnesium 10% fraksi berat sebagai agen pembasahan. Hasil penelitian menunjukkan peningkatan kekuatan tarik mencapai nilai optimum pada penambahan 8%. Selain itu, sifat kekerasan meningkat seiring dengan penambahan partikel penguat yang juga menyebabkan turunnya laju keausan. Karakterisasi struktur mikro menunjukkan terbentuknya huruf cina serta Mg₂Si utama dan eutektik.

.....Aluminium alloy A356 composite strengthened by silicon carbide particles has the potential to have good mechanical properties with low mass. In this study, casting was done by stir casting method by added silicon carbide 2%, 5%, 8%, 10% dan 15% volume fraction, also magnesium 10% weight fraction as a wetting agent. The results showed that the increase in tensile strength reach optimum point on the 8%. In addition, the nature of hardness increased with the addition of silicon carbide which also cause a decrease in the wear rate. Microstructure characterization showed the presence of chinese script, primary and eutectic Mg₂Si.

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