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Al₂O₃颗粒增强铝基复合材料的半固态搅熔复合

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摘要: 采用半固态搅熔复合及模锻方法制备Al₂O₃/Al复合材料, 讨论了工艺参数对Al₂O₃颗粒在铝合金液中的吸收性与分散性的影响, 并对所得复合材料的强度、冲击韧性和耐磨性进行了实验。结果表明, 通过选择合适的工艺参数, 可以很好地解决Al₂O₃颗粒在Al合金液中的分散性问题, 所得复合材料具有一定韧性和良好的耐磨性能。

关键字: 铝基复合材料; 颗粒增强; 搅熔复合

Melt-stirred composing in semi-solid for Al₂O₃ particulate reinforced aluminium matrix composites

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Abstract: Al₂O₃/Al composites were manufactured through melt-stirred composing and die-forging in semi-solid. The effect of processing parameters on the absorbability and dispersiveness of Al₂O₃ particulate in aluminium liquid was investigated. The strength, impact toughness and wear resistance of the composites were also examined. Results show that the problems of the dispersiveness of Al₂O₃ particulate in aluminium liquid can be solved effectively by alternative processing parameters. The composites possess relative toughness and good wear resistance.

Key words: aluminium matrix composites; particulate reinforced; melt-stirring composing

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