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COMBINED EFFECTS OF STIR CASTING AND IN-SITU TECHNIQUES IN THE PRODUCTION OF AL 6061-TIB$_2$ METAL MATRIX COMPOSITE WITH DIFFERENT REACTION HOLDING TIMES AND ITS CHARACTERIZATION

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Abstract

At 850°C, with the aid of KBF_4 and K_2TiF_6 salts the exothermic effect utilizes to formulate in-situ TiB_2 particle-reinforced Al 6061 metal matrix composites. To inspect the level of effect and the expansion actions of TiB_2 united effect of stir casting and insitu techniques experiential from a preference of composites by varying the period of exothermic reaction from 15 to 60 minutes period. This investigation reveals quite evident consequences on mechanical properties for instance tensile strength, yield strength and hardness based on reaction holding time. The comparative investigation on mechanical properties and microstructure of the composites with Al 6061alloy (as cast) also presented.

Author Keywords

In-situ TiB2, Al 6061 metal matrix composites, K2TiF6 and KBF4, stir casting.

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