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Effect of quenching media on the mechanical properties of AL 6061-TiO₂ metal matrix composites

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Abstract

The authors studied the effect of quenching media on the mechanical properties of AL 6061-TiO₂ metal matrix composites. The Al alloy based MMC are becoming popular in aerospace and automobile industries. Al 6061 having excellent mechanical properties is used as matrix material TiO₂ which has high hardness and corrosion resistance is used as the reinforcement. The MMC were fabricated by stir casting process. The specimens were subjected to heat treatment at a temperature of 530⁰c for 1.5H and quenched in different media namely air,water,aqueous polymer and ice.Hardness and tensile strength were measured.The authors observed that the quenching has significant effect on hardness and tensile strength compared to cast composites.