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(57) Abstract :

The invention relates to the development and analysis of aluminum matrix composites using Al 6063 reinforced with nano- and micro-sized silicon carbide (SiC) particles. The hybrid composite is fabricated using a stir casting technique and evaluated for mechanical and structural properties. Results show significant improvements in tensile strength, hardness, and wear resistance due to the synergistic effects of nano and micro SiC. This invention provides a cost-effective and scalable method for producing high-performance AMCs for structural applications.

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