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Importance of Nanoparticles in Heat Transfer

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ABSTRACT

The effect of nanoparticle applications in quite propitious in ameliorating the heat transfer characteristics of base fluid in heat exchanger. The concept of adding SDBS additives to the base fluid is to obtain better heat transfer and cooling characteristic. The size of the catalyst (micro size or nanosize) added to the base fluid plays a significant role in the improved base fluid properties. The information indicates that addition of nanoparticles to any conventional coolant (such as water, ethylene glycol) enhances the heat transfer rate and cooling rate favours reduced evaporation time and leads to better characteristics. The physical properties of the base fluid and the modified fluid formed by dispersing the nanoparticles by ultrasonic agitation. Comparisons of the heat transfer of the fluid with and without the additive are also presented. The heat transfer levels of base fluid are appreciably increased with the addition of nanoparticles.

Keywords: Nanoparticle; SDBS; Thermal Conductivity; Synthesis.

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Comparison of Wear rate parameters in Aluminium Based Silicon Carbide Metal Matrix Composite

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ABSTRACT

The applications of Metal Matrix Composites (MMCs) are being growing day by day in the aerospace, automobile and many other industries, because of their enhanced properties compared to consistent metals. This trend has been known to their better specific strength and stiffness, high temperature ability, lower coefficient of thermal expansion, better wear resistance, improved dimensional stability. This Paper is concerned with Aluminum Matrix Composites and more specifically on the Aluminum (Al) based Silicon Carbide (SiC) metal matrix composite. The main aim of this Paper is to check practicality of the Aluminium based Silicon Carbide metal