

# **ADVANCED HEAT TRANSFER ENHANCEMENT USING NANO FLUIDS- AN OVERVIEW**

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## **ABSTRACT**

Nanofluids are quasi single phase medium containing stable colloidal dispersion of ultrafine or nanometric metallic or ceramic particles in a given fluid. Nanofluids possess immense potential of application to improve heat transfer and energy efficiency in several areas including vehicular cooling in transportation, power generation, defense, nuclear, space, microelectronics and biomedical devices. In the present contribution, a brief overview has been presented to provide an update on the historical evolution of this concept, possible synthesis routes, level of improvements reported, theoretical understanding of the possible mechanism of heat conduction by nanofluid and scopes of application. According to this review, the future developments of these technologies are discussed. In order to put the nanofluid heat transfer technologies into practice, fundamental studies are greatly needed to understand the physical mechanisms.

**KEY WORDS:** NanoFluids, Nano particles, Heat transfer enhancement, Applications of Nanofluids.