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Theoretical Investigation of Thermal Properties of Nanofluids with Application to Solar Collector

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Abstract : Nanofluids are emergent fluids that exhibit thermal properties superior than that of the conventional fluid. Nanofluids are suspensions of nanoparticles in fluids that show significant enhancement of their properties at modest nanoparticle concentrations. Solar collectors are commonly used in areas such as industries, heating, and cooling for domestic purpose, thermal power plants, solar cooker, automobiles, etc. Performance and efficiency of solar collectors depend upon various factors like collector & receiver material, solar radiation intensity, nature of working fluid, etc. The properties of working fluid which flow through the collectors greatly affects its performance. In this research work, a theoretical effort has been made to enhance the efficiency and improve the performance of solar collector by using Nano fluids instead of conventional fluid like water as working fluid.

Keywords : nanofluids, nanoparticles, heat transfer, solar collector
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