

Design and Manufacturing of Test Setup for Measuring Thermal Conductivity of Water and Nanofluids

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***Abstract:** This Project is about the effective thermal conductivity of water is tested by steady state method using Fourier's law, the obtained values will be compared with the standard value of thermal conductivity of water or thermal conductivity of different nanofluids to validate the results and therefore the rest setup. Thermal conductivity of different nanofluids with different concentration levels will be obtained and also the variation of thermal conductivity of nanofluids with temperature will be studied. The effect of different salts and additives on the thermal conductivity of water will be studied. Determining the physical properties of substances is an important subject in many advanced engineering applications. The physical properties of fluids (liquids and gases), such as thermal conductivity, play an important role in the design of a wide variety of engineering applications, such as heat exchangers, we are implementing, "Design and manufacturing of Test Setup for Measuring Thermal Conductivity of Nanofluids" to calculate the thermal conductivity of different nanofluids with different concentration.*

***Keywords:** Thermal Conductivity, Steady State, Fourier's Law, Nanofluids.*

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