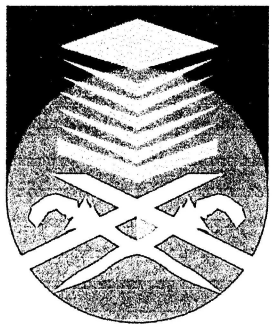

EXPERIMENTAL INVESTIGATION OF NANOFLUIDS IN LAMINAR AND TURBULENT DEVELOPING FLOW IN A PIPE

MOHD NIDZOMUDDIN BIN MOHD DAUD

(2006689643)

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Faculty of Mechanical Engineering

University Teknologi Mara Malaysia (UiTM)

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"I declared that this thesis is the result of my own work except the ideas and summaries which I have clarified their sources. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any degree."

Signed : .....

Date : 20/05/2016

Mohd Nidzomuddin bin Mohd Daud

UiTM No: 2006689643

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ABSTRACT

A nanofluid in general is the suspensions of nanoparticles in a base fluid. The nanoparticles is very small with the particle size about 100 nanometers. Theoretically, the thermal conductivity of the base fluid has been improved with the addition of the nanoparticle. This is something very interesting to be studied. This report is about the investigation of nanofluids in laminar and turbulent development flow in a pipe. The propose nanofluids that are going to be use as chemicals in this experiment is of metallic type which is Zinc Oxide (ZnO). The parameter that is varied is the nanoparticle volume fraction with respect to the base fluid which is water in this experiment. The method to prepare the nanofluids is by dispersing the nanoparticles in the water. From the past studies and experiments, it can be stated that nanofluids have significant enhancement to the heat transfer properties. This can be very important in our daily life especially in heat transfer related process such as in cooling system of a car and also in the power plant. It is hoped that at the end of this investigation, a good conclusion can be drawn and will strengthen the understanding of nanofluids so that it can be more widely used and commercialized.

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