

Nusselt Number and Convection Heat Transfer Coefficient for a Coaxial Heat Exchanger Using Al₂O₃-Water pH=5 Nanofluid

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Abstract text:

Recently, a new class of fluid made up of metal nano-particles in suspension in a liquid, called nanofluid, appeared. Some numerical studies have shown that these new fluids have a higher heat transfer performance, compared with the conventional liquids. In the present study, we have attempted to study, by experimentation, the thermal performances of a particular nanofluid composed of aluminum oxide (Al_2O_3) particles dispersed in water for various concentrations ranging from 0 to 4%. The experimental set up is a coaxial exchanger, which is destined to solar application, in which the heating liquid used is the nanofluid studied.

Key Words:

experimental; nanofluid; Nusselt number.

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