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ABSTRACT

The research presented here consists of the efficiency of the cycle heat pipe, where it related to the working fluid and its properties. Heat pipes design is a closed evaporator-condenser system. It consists of a sealed aluminum and copper container whose inner surfaces have or not have a capillary wicking material. Many heat pipes are strictly thermosyphon, as they do not posses capillary or other means for transporting liquid internally but it differs from the thermosyphon-by virtue of its ability to transport heat by an evaporation-condensation cycle with the help of porous capillaries that form the wick. The thermal behavior of heat pipes has been studied experimentally and analyzed. Comparison was made against the data collected for various heat pipes that contains water as a working fluid. Heat pipes is the most efficient device as a transfer device among heat pipe without wick, heat pipe with wick combine air and heat pipe with wick combine vacuum. All fabricated heat pipe have a small amount of water inside as a working fluid. It also shows that boiling temperature for the heat pipe in vacuum region is below the normal region. By the experiment, the data of the heat pipe such as heat supplied and heat dissipated from the pipe, measured by temperature indicator is taken and the efficiency is calculated.

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