

Performance of the Hybrid Loop Heat Pipe

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Abstract : A two-phase cooling technology of passive system sometimes can no longer meet the cooling needs of an increasingly challenging due to the inherent limitations of the capillary pumping for example in terms of the heat flux that can lead to dry out. In this study, intended to overcome the dry out with the addition of a diaphragm, they pump to accelerate the fluid transportation from the condenser to the evaporator. Diaphragm pump installed on the bypass line. When it did not happen dry out then the hybrid loop heat pipe will be work passively using a capillary pressure of wick. Meanwhile, when necessary, hybrid loop heat pipe will be work actively, using diaphragm pump with temperature control installed on the evaporator. From the results, it can be said that the pump has been successfully overcome dry out and can distribute working fluid from the condenser to the evaporator and reduce the temperature of the evaporator from 143°C to 100°C as a temperature controlled where the pump start actively at set point 100°C.

Keywords : hybrid, heat pipe, dry out, assisted, pump

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