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Comparison of Particle Size for α(Alpha) Fe2O3 and ɤ(Gamma)Fe2O3 on Heat Transfer Performance in an Copper Oscillating Heat Pipe

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Abstract : The effect of α(alpha) Fe2O3 and ɤ(gamma)Fe2O3 particles on the heat transfer performance of an oscillating heat pipe was investigated experimentally. Kerosene was used as the base fluid for the OHP. Six size particles with average diameters of 10 nm, 20 nm, and 30 nm αFe2O3 and ɤFe2O3 were investigated, respectively. Experimental results show that the ɤFe2O3 particles added in the OHP significantly affect the heat transfer performance. When the OHP was charged with kerosene and 20 nm ɤ Fe2O3 particles, the OHP can achieve the best heat transfer performance among six particles investigated in this research.

Keywords : copper oscillating heat pipe, heat transfer, flow, comparison of α(alpha)Fe2O3 and ɤ(gamma)Fe2O3, increase heat transfer
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