

عنوان مقاله:

The effect of SiO₂nanoparticles on characteristics of pool boiling over a flat plate heater

محل انتشار:

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خلاصه مقاله:

The nanofluid pool boiling over a copper flat plate heater was studied experimentally. The purpose of this study is to observe the effects of SiO₂ nanoparticles on boiling heat transfer coefficient (BHTC) and critical heat flux (CHF) of silica nanofluid. Boiling of SiO₂nanofluid and DI water on coated and uncoated heater were examined. The range of nanofluid concentrations was 0.001-0.1 vol.%. The results show in boiling of DI water on coated surface, BHTC values are higher than those in boiling of DI water on uncoated surface and boiling of 0.0025 vol.% nanofluid. CHF value for boiling of nanofluid is higher than that for boiling of DI water over nanocoated surface. It defines that in addition to deposition of nanoparticles on heater surface, presence of nanoparticles in boiling fluid is responsible for CHF enhancement.

کلمات کلیدی:

nanofluid pool boiling; flat plate; nanocoated surface; CHF; heat transfer coefficient

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