

### **Analysis on characteristics of bubble growth about Al<sub>2</sub>O<sub>3</sub> nanofluid during pool boiling**

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**ABSTRACT** Boiling is the heat and mass transfer process simultaneously during phase change that is fluid change from liquid to vapour. That is seriously influenced by characteristics of liquid properties and heated surface. Generally, nanofluid has superior thermal properties than base fluid and improves critical heat flux during boiling according to existing studies. In this study, numerical analysis about boiling the characteristics according to the a variation in concentration in concentration of Al<sub>2</sub>O<sub>3</sub> nanofluid were carried out. As a result, critical heat flux increased from 1,018 kW/m<sup>2</sup> to 1,264 kW/m<sup>2</sup>. It is because that the decrease of contact angle and improved wettability. The increase of concentration of nano particle causes the reduction of active nucleate site density per superheat on surface. Therefore, natural convection effect gets stronger but heat transfer by microlayer evaporation is undermined.