

## عنوان مقاله:

Flow Boiling Heat Transfer of R-134a inside a Smooth Tube with Different Tube Inclinations

## محل انتشار:

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## خلاصه مقاله:

An experimental investigation has been carried out to study the heat transfer characteristics during evaporation of R-134a inside a single smooth tube. The experimental facility makes the tube capable of having different inclination angles,  $\alpha$ , with respect to horizon. The experiments were performed for seven different tube inclinations,  $\alpha$ , in a range of  $-90^\circ$  to  $+90^\circ$  and four refrigerant mass velocities in a range of 53 to 136 kg/m<sup>2</sup>s for each tube inclination angle. The experimental results indicate that the tube inclination noticeably influenced the vapor and liquid distribution as well as the evaporation heat transfer coefficient. It was found that for all refrigerant mass velocities, the highest heat transfer coefficient is attained at inclination angle of  $\alpha = +90^\circ$ . The effect of tube inclination angle on heat transfer coefficient is more prominent at low vapor quality and mass velocity. A correlation has also been developed to predict the heat transfer coefficient during flow boiling inside a smooth tube with different tube inclinations.

## کلمات کلیدی:

flow boiling; heat transfer; tube inclination; R-134a

## لینک ثابت مقاله در پایگاه سیویلیکا:

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