

عنوان مقاله:

Theoretical and experimental investigation of humidification process in mist formation state

محل انتشار:

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خلاصه مقاله:

In this paper, humidification process over a cross flow packed bed with an open air cycle is studied and a precision model is presented. Initial results show that air may become saturated with water vapor prior to its exit from the packed bed. In this case excess water vapor condenses as mist in air stream that named supersaturated state in some references. So the model was developed for mist formation (supersaturated) state and a complete mathematical model was introduced to predict the outlet condition of the air and water streams from the packed bed. Then the model was validated by using experimental results obtained from an experimental facility. Comparison of the theoretical and experimental results confirms the ability of the this model at prediction of outlet condition of air and water streams. Effective parameters on development of mist (supersaturated) zone were studied. Proposed model can be used in design of HD desalination units and result in better prediction of outlet condition of humidification process

کلمات کلیدی:

humidification process, packed bed, mist formation, supersaturated air, HD desalination

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