

## عنوان مقاله:

A Study of Curved Louver Fin Configuration for Heat Transfer Enhancement

## محل انتشار:

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## خلاصه مقاله:

Herein, the heat transfer performance of the curved surface of a louvered fin heat exchanger using computational fluid dynamics (CFD) is examined. Four new models are used with curved surfaces in different locations. The air inlet velocity is 1-9 m/s. The air and fin wall temperature remain constant at 300 and 353 K, respectively. The result of the reference flat fin is confirmed with experimental results. The results demonstrate that curved fins changed the airflow path and created vortices. The air tends to flow between louver fins, improving its velocity and enhancing heat transfer. The result from the case that individual fin is close to the middle fin demonstrated that louver fin provides a 15% increase compared to that of the reference. However, when the air inlet velocity is high, the performance evaluation criteria from the case that individual fin is close to the first fin, is the highest, which results in a 1% increase from that of the reference. Therefore, increasing heat transfer can compensate the effect of pressure drop because of vortices in the louver fin domain. This study can be applied to the air conditioning system to increase its efficiency and cut the operation cost down.

## کلمات کلیدی:

CFD, Louver Fin, Heat exchanger, Convective Heat Transfer

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1379500>



