

Thesis Title	Mathematical Model for Predicting the Evaporation of Defrosted Water from Evaporators of Refrigerators
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Abstract

In this study, the evaporation and the temperature change of defrosted water are numerically investigated. The model is based on the fundamental of Thermodynamics and Heat transfer. The model's results are compared with experimental datas and those from the other works reported in literature. The model's results are presented on the form of Temperature vs Time, Evaporated water vs Time, Heat transfer rate and Evaporation rate vs Time. The present model is validated by comparing with the experimental data and the comparison of the simulation results with the experimental data are agree quite well. The following parameters are found to effect on the evaporation rate;

- Air velocity ; the water temperature decreases and the water evaporation rate increases with an increase of the air velocity.
- Area of the water tray ; the water temperature decreases and the water evaporation rate increases with an increase of the area of the water tray.
- Area of the compressor shell ; both the water temperature and the evaporation rate increase with an increase of the area of the compressor shell.
- Ratio of the compressor shell area and water tray area ; the water evaporation rate increases with an increase of the area ratio.
- Evaporation rate increase with increasing characteristic length. However when characteristic length is increased beyond the optimum characteristic length, the evaporation rate can not be further increased.