



21CR Project 612-10050

Fundamental Understanding of Heat and Mass Transfer in NH₃/H₂O

Updated 7 June 2006

Objectives:

- (1) Quantify the performance of ammonia absorption into water;
- (2) Explain or identify the degradation relative to pure fluids;
- (3) Develop a computer model verified for falling-film absorption including experimental validation of the model.

Information/items expected to result from this project:

- (1) A written report including the literature survey and critical analysis;
- (2) A verified computer model of the ammonia absorption process which correlates the dependence on all key relevant parameters;
- (3) A detailed description of the experimental apparatus and procedures;
- (4) Experimental results and comparison to model predictions.

How are the results likely to be applied:

The results will be used by HVAC&R equipment manufacturers to design more efficient and cheaper absorbers. The computer model availability will allow heat exchanger design engineers to develop cost effective absorbers without any limitation of propriety nature.

Research subcontractor:

Georgia Tech Research Corporation, Atlanta, GA (Principal Investigator: Srinivas Garimella)

Status:

The project is currently ongoing and is scheduled for completion in December 2006.

Responsible 21CR Subcommittee: Emerging Technologies