

#### **TC 8.4 Research Promotion 1/14/02 6:30PM**

**Attendees:** Ray Rite, Steve Hancock, Mike Heidenreich, John Coleman, Steve Memory, Tom Kuehn, Ming Zhang, Jun-Hyeung Kim, Ram Narayanamurthy, Mike Connaghan, Gary Price, Gordon Struder, David Honeycutt, John Chato, Paul Krause, Tim Shedd, Yongcheol Sa, Jim Parsons, Tony Jacobi, Micol DeJong, Jurgen Voss, Roland Ares, Jing Zheng, Karine Brand, Eckhard Groll, Michel LeCompte.

Ray Rite chairing for D. Zeitlow who was unable to attend.

#### **Tom Kuehn, Research Liaison:**

Budget 75% of previous years, therefore TC's need to do a better job of filtering projects. ASHRAE research digest has instructions for writing RTAR's. Service to ASHRAE research award to a volunteer for research. 1 awarded per year.

#### **RP-1100 Control of Frost Accumulation in Refrigeration Equipment Using the Electrohydrodynamic (EHD) Technique;** PI Mike Ohadi, Univ. of MD.

PMS Chair, Gary Price, reports that final report has been submitted, reviewed and returned to Ohadi for minor correction of typos. Price recommends that subcommittee approve the final report. Final vote will be at 8.4 committee meeting 1/15.

#### **RP-1195 Microchannel Heat exchanger Defrost Performance and Reliability;** PI Eckhard Groll, Purdue University

Presentation of progress by student Jay Kim.

Two phases of project: Performance testing and reliability testing. Performance testing is on track, reliability testing is running behind due to equipment problems. Reliability test equipment problems have been resolved and commissioning tests have been completed and reliability testing is proceeding. Performance testing should be done by next ASHRAE meeting.

#### **Research Proposal Status:**

1. "Refrigerant Distribution in Evaporator Manifolds" (WS-1260) Funded
2. "High Temperature Dehumidification" WS In Progress - Hancock
3. "Evaporators for Stationary R-744 Refrigeration Systems" (RTAR 2003-79) Returned to us from RAS because they feel that this is development work that should be done by OEM's. Author, Paul Krause, agrees and subcommittee decides to withdraw the RTAR.
4. "Development of Thermal Performance Models for Louvered Fins under Wet Operating Conditions with Applications to Evaporator Design" Work Statement completed but duplicate research has been initiated by ARTI so committee recommends to withdraw this project.
5. "Evaluation of Copper Heat Exchangers with Flattened Tubes and High Strength Foil Construction for Optimum Performance" Also initiated by ARTI. Recommend to withdraw this project.
6. "Influence of Variable Porosity Media on Air Flow Distribution through Evaporators" WS in progress
7. "Geometry Optimization of Heat Exchangers with Air/Zetropic Refrigerant Mixtures" Recommend to withdraw the project due to little interest and previous research

#### **Brainstorming for new research ideas.**

1. Emerging applications for heat exchangers. (Fuel Cells) Ram Narayanamurthy
2. Miniature refrigerant/air heat exchangers. John Chato (no RTAR author, yet)
3. Update public simulation tools to include microchannel heat exchangers. Eckhard Groll
4. Comparison of plain and internally enhanced large dia. (1") tubes for evaporation of overfed Ammonia. Gary Price, Gordon Struder, David Honeycutt
5. Tube to tube conduction effects in finned tube heat exchangers. Jim Parsons
6. Effect of Geometry and Conditions on Water Carryover. Ray Rite.