

Meeting Minutes
Long Beach, Annual Meeting 2007
ASHRAE TC 1.3 - Heat Transfer and Fluid Flow

Committee Meeting Information:

General Meeting: 1:00 to 3:30 on Tuesday (June 26, 2007), LBCC/204(2).

Research Review: 3:00-7:00P on Sunday (June 24, 2007), LBCC/201a.

Handbook Subcommittee: 1:00-3:00 on Saturday (June 23, 2007), R/Roselli (3)

Action Items

- Shedd:
 - Follow up with authors for Transactions session in Salt Lake
 - Management by Objectives objective list
 - Update Chapter 4 of Handbook with examples, corrections
 - Minutes of this meeting
 - Send Quebec minutes to Darin Nutter for website
- Steve Eckels
 - Write letter commenting on seminar recording
- Rick Couvillion
 - Update Ch. 3 of Handbook
 - Update Ch. 5 of Handbook
- Mike Ohadi
 - Assist with Ch. 3 of Handbook
 - Produce seminar on transient behaviors
- Darin Nutter
 - Make final updates to Website
- Branko Korenic
 - Contact Bruce Nelson to complete workstatement
- Bill McQuaid
 - Contact Keith Starner about being Distinguished Lecturer for ASHRAE

Meeting called to order at 1 pm

1. Introductions (Eckels)

- All in attendance introduce themselves

2. Confirmation of quorum (Eckels)

- Total voting members: 11
- 8 of 11 voting members present

3. Approval of Minutes from Dallas, January 30, 2007.

- Minutes from Dallas approved (8-0-0)

4. Liaison Comments (Eckels)

- Chuck Wilkin – Section 1 chair visited the meeting with the following updates:
 - Website needs to include chair alias
 - Be sure to remove any personal contact info from website;

- The website should contain the minutes on first page along with Goals, TC name and up-to-date Scope (it was noted that the TC 1.3 site appeared to be in compliance with these items)
- Research has \$200 to \$300K available, so be sure to submit RTARs
- Please be aware that there is a 24 hour deadline to upload seminar presentations prior to session or there will be a penalty for the sponsoring TC
- CTTC – Topic and/or speaker for chapter meetings
- Wilkin presented Steve Eckels with certificate for his services as Chair

5. Report from Membership Chairperson (J. Hartfield)

- Roster for 2007-2008
 - Voting members rolling off: Tim Shedd and Steve Eckels
 - Joe Huber rolling on as voting member
 - Satheesh Kulankara becomes Chair, Tim Shedd Vice chair and Branko Korenic becomes Secretary
 - Right now: 12 voting members; 7 from industry, 5 from academia, and 2 international members
 - Standards chair – Satheesh Kulankara
 - Membership chair – Jon Hartfield
 - Research chair – Joe Huber
 - Handbook chair - Rick Couvillon
 - Webmaster - Darin Nutter
 - Program chair – Amir Jokar
 - Currently 34 corresponding members

6. Report from Program Chairperson (Shedd)

- Report from Seminar 74, Electronics Cooling
 - No report yet; to be held tomorrow
- Status of future program items
 - No pending programs; need input for upcoming meetings
- Future program ideas
 - New York: Toward Net-zero Energy
 - Transient modeling and experimentation with thermal systems
 - Non-equilibrium systems?
 - Non-ideal behavior
 - Mike Ohadi interested in speaking on this
 - Looking for 10 programs for New York; Aug 3rd
 - Transactions session for Salt Lake City: Advances in Compact Liquid Cooling Systems – Shedd will follow up
- Complaints about seminar recording and sales. The issue is that since the slides will be distributed, it places the presenter in the position of “publishing” information. He/She may be held liable for mistakes or mis-information. Policy limits the free flow of ideas and sharing of current, perhaps tentative data and conclusions
 - Motion to express displeasure with policy of recording ALL seminars
-> Steve Eckels will write

7. Report from Handbook Chairperson (R. Couvillion)

- Report from Handbook Subcommittee meeting
 - Reviews on Ch 2 – good reviews

- Reviews on Ch 3 – Needs to be smoothed out
- Reviews on Ch 4 – add examples
- Reviews on Ch 5 – less theory
- Schedule for next Handbook update
 - November drafts
 - December to committee
 - January vote for approval

8. Report from Webmaster (D. Nutter)

- Working now and up to date
- tc13.ahraets.org
- Send Quebec Minutes
- Bringing up-to-date by January
- Feedback?
- Citations from Previous work

9. Report from Research Chairperson (J. Huber)

- Research Subcommittee Chair comments from research meeting
 - Survey results – large decline in submission in RTARS (25%) and WS (39%)
 - ➔ lack of time, reluctance because of authors discouraged
 - Thus, ASHRAE relaxing conflict of interest policy
 - Quality of workstatements also fell
 - Changes in Funding so that funding is more steady; up to 10% of research reserve fund to dampen out fluctuations
 - Research promotion dollars are up 30%
 - More flexibility in approving projects in LRP and/or president
 - Recognize WS authors and PMS members; ASHRAE Journal October issue
 - LRRP: Don't submit LRRP to ASHRAE; ASHRAE ignoring priorities on forms
 - 82% of WS were approved; 72% of RTARS were approved
 - Streamlining comments and passing along so that previous work is considered
- Current Research
 - i. *RP-1280 (Measurement and Evaluation of Single-Phase Heat Transfer and Pressure Drop Inside Enhanced Tubes for Transition Flow, PI = Joshua Meyer, PMS Chair = Petur Thors, Ken Schultz, Axel K, Satheesh)*
 - Ken Schultz – one more change to test rig to eliminate corrosion; test matrix: 5/8" and 3/4"; smooth and 4 enhanced geometries + 4 inlets. Showing excellent repeatability in 5/8; transitions clear and repeatable; transitions move to lower Re as enh increases. Diabatic results are different; independent of inlet and tube type; will look at Pr effect. Current end date August 2007 need extension to at least February 2008
 - Move to grant no cost extension to RP-1280 until August 2008;
 - Eckels moves, Jacobi seconds, motion passes no discussion (8-0-0)
- ii. *RP-1270, (Performance Characterization of Selected Refrigerants in Flat Plate Microscale Condensers, PI = Michael Ohadi, PMS chair = Jon Hartfield, John Thome, Samuel Yana-Motta)*

Jon Hartfield: reviewed test matrix; 4 different saturation temperatures; 4 mass fluxes, 4 entering superheat temperatures; R134a and R245fa. Channel dimensions are 0.7 mm with aspect ratio of 7. R134a data are complete; and - 245fa are 85% or more complete. Results: low impact of superheat on HTC, but saturation temperature has big impact. Mass flux has low impact with R134a and higher impact with R245fa. Comparisons have been made with literature values and show reasonable agreement. Since the research is with a small channel with high AR it is recommended that the researchers verify dimensions after project. Complete in September; requested 6 month no cost extension

- Motion to grant 6 month no-cost extension RP-1270 to February 2008.
 - Hartfield moves, Eckels seconds moves, approved (7-0-1)

iii. *RP-1352 (Evaporation in Corrugated Plate Heat Exchangers with Ammonia and Ammonia/miscible oil) (PMS Chair: Zahid Ayub, Tim Shedd, Bruce Nelson) GIK Institute: Dr. S. Khan*

Summary: Oct 18 2006, submitted 2 progress reports. Literature review is complete. Draft paper is complete. Major components received and installation in progress; ready by July for first tests.

- Long Range Research Plan from Dallas Meeting (Looking for RTAR writers)
 - CFD for use in air-side fin design
 - Work Statement “Correlation for Air-Side Heat and Mass Transfer in Finned-Tube Heat Exchangers with High Latent Cooling Loads” (Bruce Nelson)
 - Bruce Nelson and Branko Korenic– no progress; have till August 15
Branko will contact Bruce to see if this can be submitted
 - Update on “Modeling of Frost Growth” RTAR (B. Nelson)
 - No response from Bruce Nelson, so will be dropped
 - Other topics of interest – Brainstorming session in New York
 1. Two Phase flow fundamentals through Tees and orifices
 2. Measure droplet sizes coming out the top of a flooded evaporator
 3. Nanofluids in HVAC
 4. Effect of dust on fouling of air side of heat exchangers
 5. Low temperature correlations for CO₂ and NH₃
- URP 1444 voted on tomorrow morning
- 1207 RP missing disposition for research form
- Yagoobi project is still missing paper; ASHRAE MORTS will deal with this

10. New business (Eckels)

11. Announcements from TC chairperson meeting (Eckels)

- Interest in CTTC Chapter Technology Transfer Committee
 - Art Bergles and Ralph Webb great distinguished speakers
 - Will Stoecker
 - Victor Goldschmidt
 - Keith Starner – Bill McQuaid will contact

- Develop MBO – Management By Objective
 - Objectives by vice-chair

12. Adjourn (Eckels)

- Motion by Jacobi, Second by Korenic