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TC/TG/MTG/TRG MINUTES COVER SHEET

(Minutes of all Meetings are to be distributed to all persons listed below within 60 days following the meeting.)

TC/TG/MTG/TRG No. TC 1.1 DATE 8 February 2023

TC/TG/MTG/TRG TITLE Thermodynamics and Psychrometrics

DATE OF MEETING 6 February 2023 LOCATION Omni CNN Center Atlanta

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Omar Abdelaziz	2019	Vikrant Aute	2019	Hongmei Liang
Ayyoub Momen	2019			Riad Assaf
Harshad Inamdar	2019			Roy Crawford
Kashif Nawaz	2019			Eric Ratts
Stanislav Perencevic (NQ)	2019			SA Sherif
Raymond Rite	2022			Andrew Hjortland
				Andrew Fix
				Sebastian Herrmann
				Kyle Shepard
				Sheldon Jeter
				Deba Maitra
				Ramy Mohammed
				Luke Simoni
				Khalid Saleh
				Baalaganapathy Manohar
				Matt Robinson
				Joshua DeYoung

DISTRIBUTION: ***All Members of TC/TG/MTG/TRG plus the following:***	
TAC Section Head:	SHx@ashrae.net Where x is the section number
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters (Research, Standards, ALI, etc.)	See ASHRAE email alias list for needed addresses.
Mike Vaughn, Manager Of Research & Technical Services	MORTS@ashrae.net

MINUTES: ASHRAE TC 1.1, Thermodynamics and Psychrometrics
6 February 2023, 2:15pm – 4:15pm (EST)
Cottonwood A, Omni CNN Center
Atlanta, Georgia United States of America

The chair called the hybrid meeting to order by the chair at 2:16 pm
Quorum was established. 5 present (in-person), 1 absent, 1 NQ
Attendance sheet was passed.
Participants had a round of introductions.
Chair read code of ethics.

Section Head Comments (Corey Metzger)
Section 1 head provided quick updates and mentioned that TAC is working with CTTC to identify potential collaboration opportunities and improve TC membership by tapping into the 50,000 strong society.

Research SC report (Kashif Nawaz):
RAC breakfast update slides were presented and discussed - see attached/appendix..
RP 1767 "Proposed Moist Air Transport Properties" is complete

New ideas:

- Simplified equations for transport properties of moist air. Suggested to submit directly as a WS instead of URP; try to fast track it.
- Decarbonization and covid 19?
- thermodynamics of H2 and NH3

Pending discussions and ideas

- do we need transport properties for H2/CH4 mixtures?
- Thermodynamic study for heating methods using H2 could be performed including lifecycle analysis (co-sponsored by 6.10)
- Humidity impact on Covid (40 to 60% being the sweet spot). Need to study impact of particle size, air change, and humidity on filtration — potentially need to discuss with 4.3
- Psychrometric visualization, how can we display processes when moving from typical ambient to low dew-point temperatures (e.g., -50C) as required by new manufacturing facilities for LFP batteries manufacturing and recycling facilities

Toronto Meeting Minutes Approval; moved by Harshad, second by Omar, motion carries 4(for)-0(oppose)-0(abstain)-1(absent)-CNV

Handbook SC report (Riad Assaf):
TC1.1 is on schedule for chapter 1. Hans Joachim and Sebastian Herrmann are providing edits and review. Progress was presented (details in the appendix)

Chair received a question about HB:
The chapter talks about the basic Vapor compression cycle; Ahmed Ali is asking why there is a lack of emphasis on the impact of the working fluid on the cycle performance.
Roy: there are 2 chapters that specifically talk about refrigerants and provide information about the performance of these refrigerants on "apple to apple comparison"

Harshad: In chapter 2 there are 2 sections related to the working fluid; 1 related to the equation of state and the other on the impact of the fluid properties.

Ray will respond to question with brief summary of discussion.

Program SC report (Omar Abdelaziz):
Unfortunately, we were not able to successfully submit programs for Atlanta.
For Tampa; a potential program would be that for high temperature heat pumps. DOE is currently looking for 200˚C applications.
Ray volunteered to chair the session, Kashif can present or have someone from ORNL talk about high temperature applications, JCI recently acquired a company in Europe on high temperature industrial heat pumps, follow-up with Roy.
Track: #4; decarbonization.

For Chicago, we can present a program on Carbon capture as means for more effective indoor air quality for higher efficiency ventilation. Potential speakers:
Baala (SSOE) can reach out to someone from the EXPO who is working in this area
Ayyoub can reach out to researchers from NASA on special HVAC applications.

Standards SC report (Roy Crawford):
Vikrant sent an email on the Standards committee to check if a meeting is needed regarding standard 213P; Roy preferred to have an online meeting post Atlanta. Not enough progress being done.
Harshad has a draft with him, Sebastian provided an update but was not yet incorporated. The current scope covers thermodynamic properties only.
Roy mentioned that they will get back on track soon.

Webmaster report (Bill Fox):
Bill would like to be replaced as a webmaster. Ray mentioned that the website coordination is much easier now than it used to be. He is currently holding this position but is actively looking for a replacement.

MTG Low GWP (Ray Rite):
Looking for new volunteer to be our liaison.
Ray could not attend the December meeting, but at Sunday's meeting, there was an update given on RP 1806. Jan 22 Phase 2 report came out, PMS comments are being addressed, pilot study report submitted Dec 2022. There will be a "go-no-go" decision on Phase 3 after report is reviewed by PMS.
The MTG provided a conditional approval for RP-1855 (Determination of the Impact of Combustion Byproducts on the Safe Use of Flammable Fluorinated Refrigerants pending final PMS approval of minor editing.
TRP 1884 (A2L odorant follow-up project) will proceed. MTG is not the main sponsor but tracking.
Programs were approved on A2L standards updates for Tampa.
MTG Part B meeting will be Wednesday at 10AM.

Roster updates (Ray Rite):
5 rolling off~
Andy Hjortland, Sebastian Herrmann, Riad Assaf, Hongmai Liang, and SA Sherif volunteered to be VMs.
Ray will also talk to Brian Fricke about his continued interest.

New Business:
Question from ASHRAE staff; TC owns "Understanding psychrometric" 3rd Edition. Does this publication need to be updated, retired, or remained as is?
Roy - no one can update it since it was authored by Don Gatley.
Book is mainly historical and latest edition does have the results of RP1485. So does have latest and best psych properties.
Ray (no need for a motion). Ray will respond to ASHRAE staff with summary of our discussion.

Chair comments:
Ray talked through the notes from the chair breakfast discussions.
No need to follow the Robert rules of order and instead use the ASHRAE simplified rules of order.

Roy: we are losing some people to avoid partial meeting overlap. We need to avoid the 15 min conflict between 1.1 ending at 4:15 pm and other committees starting at 4:00 pm.

New Business: Harshad; cascade cycles don't appear in Fundamentals -
Ray suggests that it is in Refrigeration; we might want to check and eventually at least have a pointer.

- Minutes recorded by Omar Abdelaziz

Approved: 6/26/23

Appendices:


TC Chairs breakfast Feb 2023_FInal.pdf


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