

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING
ENGINEERS, INC.
1791 Tullie Circle, N.E./Atlanta, GA 30329
404-636-8400**

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. 1.3 DATE 02/27/15

TC/TG/MTG/TRG TITLE Heat Transfer and Fluid Flow
DATE OF MEETING 27 January 2015 LOCATION Chicago, IL

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Zahid Ayub	2015	Steve Brown	2015	Lindsey King
Amir Jokar	2015	Branko Korenic	2016	Ben Dingel
Stanislav Perencevic (NQ)	2016	Rick Couvillion	2017	S.A. Sherif
Ray Rite	2018	Michael Ohadi	2016	Will Asher
Joe Huber	2017	Tony Jacobi	2016	Evraam Gorgy
Lorenzo Cremaschi	2018	Liping Liu	2018	Gustavo Pottker
Satheesh Kulankara	2018			Patrick Mathiesen
Achim Gotterbarm (NQ)	2018			Kishan Padakannaya
Ebrahim Al-Hajri	2015			Icksoo Kyung
				Nataraj Hariharan
				Omar Abdelaziz
				Ankit Sethi
				Nacir Achaichia
				Kyle Whitaker
				Bill Fox
				Man-Hoe Kim
				Kashif Nawaz
				Yang Zou
				Justin Piggush
				Steve Eckels



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DISTRIBUTION

<i>All Members of TC/TG/MTG/TRG plus the following:</i>	
TAC Section Head:	Nadar R Jayaraman
TAC Chair:	Eric W Adams
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters:	Arthur L Giesler, Van D Baxter, Arsen K Melikov, S A Sherif, Darin W Nutter
Manager Of Standards	Stephanie Reiniche
Manager Of Research & Technical Services	Mike Vaughn



ASHRAE TC 1.3 – Heat Transfer and Fluid Flow Winter Meeting, 27 January 2015

Call to Order and Reading of TC 1.3 Scope (Amir Jokar)

Chair Amir Jokar called the meeting to order at 1:01pm. The title, purpose and scope of the TC were read.

Introduction of members and guests (Amir Jokar)

Introductions around the room followed.

Establishment of Quorum (R. Rite)

9 of 13 voting members who count against quorum (2 of 2 NQ) were present at this time so a quorum was established. Voting members present included: Rite, Cremaschi, Gotterbarm, Kulankara, Jokar, Ayub, Huber, Perencevic, Al-Hajri

Voting members absent were: Liu, Jacobi, Korenic, Ohadi

Voting members and the year they roll off are shown below:

Ray Rite (2018)

Liping Liu (2018)

Lorenzo Cremaschi (2018)

Achim Gotterbarm (NQ) (2018)

Satheesh Kulankara (2018)

Amir Jokar (2015)

Ebrahim Al-Hajri (2015)

Zahid Ayub (2015)

Steve Brown (2015)

Stanislav Perencevic (NQ) (2016)

Tony Jacobi (2016)

Branko Korenic (2016)

Michael Ohadi (2016)

Rick Couvillion (2017)

Joe Huber (2017)

Review/Approve Minutes from Seattle, July 2014 (R. Rite)

Motion: Approve minutes as submitted. (Huber/Perencevic) 8-0-0-4-CNV

Liaison/Chairman Comments (Amir Jokar)

- Hightower Award went to John Carter TC 4.3 for service over the last 4 years.
- Best TC award: TC 1.4 won for Section 1.
- Roster update for 2015-16 is due Tuesday evening.
- ASHRAE Code of Ethics is available on the ASHRAE website.
- There is a new MTG titled: MTG.O&MEE: Operations and Maintenance Activities That Impact Energy Efficiency
- Nine TCs have volunteered to participate in remote meeting. TC 1.3 did not. 1.3 does not feel that is necessary at this point. We can ask TC 8.4 how this goes. This year's meeting will be the second time they have done it.



- Orlando Tracks set: Systems & Equip, Fundamentals & Applications, Design Build, Intl Design, Stds., Guidelines, & Codes, Cutting-Edge Technologies, The Great Debate, Modern Residential Systems.
- Learning Institute: Looking for people to develop courses.
- There was a reminder to update your BIO on the ASHRAE website. They are especially encouraging members to self-declare their employment discipline.
- Amir reminded everyone to bring up nominations for the Hightower Award and ASHRAE research awards. Deadline is 9/1/15.

Art Geisler (Research Liaison) Art clarified the voting rules and other policies. At meeting, just need 2/3 of the number required for quorum to approve an RTAR/WS/TRP.

If a person writes a WS can they bid on it. If they are successful, extra criteria required to receive project. See Research Manual for details on criteria.

Everyone was reminded that if scope of a TRP is changed, the TC needs to vote on it and notify MORTS on the results of the vote.

Section Head Comments: No comments.

Program Subcommittee (Lorenzo Cremaschi)

Notes from the CEC:

Chicago Stats: Conf. Papers: 105 abstracts submitted, 88 approved, 56 received, 49 presented; Seminars: 117 submitted/64 accepted; Workshops: 18/8; Forums: 11/4.

CEC is also looking for proposals from TCs for new presentation formats. This is where the workshop format came from.

Chicago Meeting:

Plan was to have a program on “Effect of lubricant on heat transfer and pressure drop“, but only 1 paper was submitted, so program was not submitted.

TC 1.3 was to co-sponsor with TC 8.5 program on the fundamentals of ref.-liq. heat exchangers. Not submitted due to lack of commitment from enough presenters. However, additional presenter has stepped forward, so will have ready by Atlanta deadline.

There were five papers on heat transfer and fluid flow at Chicago. Lorenzo tried to get them in a session sponsored by TC 1.3, but was not successful. One reason might be that CEC uses attendance as a criterion and TC 1.3 has a poor reputation for this apparently.

Steve Eckels suggested needing longer view and to be educational. Zayib Ayub thinks we need to look at marketing ourselves better for what the newer members are interested in.

Idea put forth on an educational topic about heat transfer/pressure drop correlations.

Atlanta Meeting (abstracts due 2/9/15):

Omar suggested seminar on the state of the art in heat transfer measurements: Patrick Geogheon ORNL has a boiling visualization project for microchannel. Thought is to do a pairing of: microchannel heat exchanger topics, visualization, measurement, heat transfer. S.A. Sherif may have some results as well that could be presented in a seminar for Atlanta.



Handbook Subcommittee (Amir for Rick Couvillion)

Rick could not make it. 2017 Fundamentals chapters are on schedule. Kashif Nawaz volunteered to be a reviewer for Chapters 4 and 6 and has corresponded with Rick.

Membership Subcommittee (Achim Gotterbarm)

Currently TC 1.3 has 13 +2(NQ) voting members. Four are rolling off: Amir Jokar, Ebrahim Al-Hajri, Zahid Ayub, and Steve Brown.

New voting member names put forth: Steve Eckels and Evraam Gorgy.

There are currently 60 corresponding members. Achim sent out a query (3 times) to see if they want to continue. Four asked to be removed and fifteen did not respond. Amir will review list with Achim and edit accordingly.

Webmaster/Journal/Insights Reports (Lindsey King)

Need to get Lindsey all the minutes that are missing from website for posting. Ray/Amir will e-mail minutes that are currently available for 2014-15. Will inquire of Justin Kaufman if he has earlier minutes for inclusion on website.

Joe will send RTARS and list of projects to Lindsey.

Research Subcommittee (Joe Huber)

Two voting items:

RTAR 1683 "Experimental Evaluation of Two-Phase Pressure Drop and Flow Pattern in U-Bends with Ammonia" Sent to VMs in December.

Motion: TC 1.3 should approve revised RTAR 1683. (Huber/Rite) 8-0-0-4-CNV

Will be sent to 8.4 for co-sponsorship. Ray will forward RTAR.

1556-TRP "Characterization of Liquid Refrigerant Flow Emerging From a Flooded Evaporator Tube Bundle" (PI: Steve Eckels, Kansas State University - PMS: Jon Hartfield, Zahid Ayub, Sathesh Kulankara, Satyam Bendapudi) will expire 2/28. PI would like a one year no-cost extension. Progress being made (1 of 4 test sets done, 2nd set to be started), but there was a chiller failure leading to delays.

Motion: TC 1.3 should approve a no-cost project extension for 1 yr. (Zahid/Huber) 8-0-0-4-CNV

RTAR "Spray Evaporation on Enhanced Tube Bundles with Low GWP Pure Ref. and Ref./Miscible Oil Mixture" – Amir Jokar/Joe Huber volunteered to go back and write after WS was initially rejected. 8.5 will co-sponsor.

RTAR 1737: "Study of the Effects of Modifying the Wetting Surface of Evap Condensers in Ref. Systems for Performance Improvement" (Lead Author: Amir Jokar) Was rejected by RAC. Comments were: current state of the art in lit rev. inadequate, budget dependent on test matrix not listed, worried about durability of coatings. Amir will send to Jacobi/Liu to see if they are interested in pushing it.



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Omar brought up in-tube boiling in small diameter tubes project in 8.4, 1.3 wants to co-sponsor.

Condensation study in 8.5 has been brought up but no champion yet. Ebrahim Al-Hajri reported that this will be worked on at 8.5 and then forwarded to 1.3.

Grant-in Aid: \$10k award to two projects with topics appropriate for 1.3. UW-Madison student was planning to present during research sub-committee meeting but became ill and could not make it to Chicago. They will try again next time. Recipient from UAlaska-Fairbanks also invited but no reply. Lorenzo will contact them about doing an actual program rather than just the research.

Research Chair's Breakfast Notes:

Iain Walker from TC 6.3 was selected for the Service to ASHRAE Research award. Need more nominees for the Homer Adams Award (Presented to deserving grad student who participated in an ASHRAE research project)

Research Summary - RTARs: 4 reviewed - 3 conditionally accepted/1 rejected; WorkStatements: 8 reviewed – 5 conditionally accepted/2 returned with comments/1 rejected; TRPs/URPs: 6 TRP went out for bid; 7 will be reviewed by RAC 1/28; 1 URP is under review. There are 59 active projects totaling \$11M. No project on hold due to funding.

RAC Evaluation and approval process to be improved.

Section 1 will have a new liaison in July. Art Geisler moving to RAC vice chair.

Next strategic plan: Need members for research advisory panel to make plan. Lorenzo Cremaschi volunteered.

New Business (Amir Jokar): No new business.

Schedule Next Meeting (Amir Jokar)

Tuesday, 30 June in Atlanta at 1-3:30PM.

Adjournment (Amir Jokar)

Motion to adjourn at 2:56.

Submitted by R. Rite as draft on 2/27/15

Approved 6/30/15