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FINAL APPROVED MINUTES
ASHRAE TECHNICAL COMMITTEE 8.4
AIR-TO-REFRIGERANT HEAT TRANSFER EQUIPMENT
CHICAGO, IL
TUESDAY, JANUARY 27, 2015

I CALL TO ORDER

Lorenzo Cremaschi, the Chair of TC 8.4, called the meeting to order at 3:30 p.m. The title, purpose and scope of the TC were read.

II SELF INTRODUCTIONS AND ATTENDANCE:

Everyone present introduced themselves, and signed a roster sheet. Lorenzo Cremaschi identified 6 out of 8 voting members, including 1 voting member attending via e-meeting. Since Chad Bower and William Burgess Fox both work in the same company, one of them (William Burgess Fox) abstained from voting.

Voting Members in this meeting	End of term (Jun 30 of...)	Present
1. Dr. Lorenzo Cremaschi (chair)	(2015)	Yes
2. Dr. Jun Wang (vice-chair)	(2015)	No
3. Dr. Chad Bower (research sub. chair)	(2018)	Yes
4. Dr. William Burgess Fox (handbook sub. Chair)	(2018)	Yes
5. Dr. Vikrant Aute (MTG LowGWP Liason)	(2016)	Yes
6. Dr. Yi Qu (webmaster)	(2015)	No (via e-meeting)
7. Dr. Liping Liu (membership)	(2018)	Yes (via e-meeting)
Voting Member non-quorum in this meeting		
8. Prof. Man-Hoe Kim	(2018)	Yes
9. Dr. Hyunyoung Kim	(2017)	No
Total Present		7 out of 8 VMs
Quorum		YES

Dr. Ebrahim Al Hajri is the e-chair for the e-meeting of TC8.4 in Chicago. He was also present in the room.

There were also 28 corresponding members and 11 guests in attendance. There were 11 members and guests who were also YEA members. Shenghan Jin, the secretary of TC 8.4, kept record of the meeting.

II ROSTER CHANGE

Starting 07/01/2015, we had 5 voting member rolling off: Dr. Lorenzo Cremaschi (chair), Dr. Jun Wang (vice-chair), Dr. Yi Qu. Also Dr. William Fox will roll off. Dr. Jun Wang is unable to serve as next chair so Lorenzo is going to extend his service as TC chair for one extra year, in order to identify the next chair and ease the transition of the chair in the best interest of the TC. Starting 07/01/2015, 3 voting members rolling on: Dr. Kashif Nawaz, Dr. Sankar Padhmanabhan, and Mr. Shenghan Jin. Therefore, we will have 7 voting members and 2 non-quorum (TOTAL: 9 voting members), starting 07/01/2015. As of today we have 9 voting members and 89 corresponding members on the TC, for a total of 98 members. Dr. Sankar Padhmanabhan will be the new vice-chair as of 07/01/2015.

III NOTE FROM SECTION HEAD:

The Section Head noticed that the meeting is well attended. No new announcement was made from the board. Section Head encouraged members to keep their bio up to date, and asked TC if there is any questions and offered any assistance if needed.

IV **REPORT FROM PROGRAM LIAISON**

None at this time

V **MINUTES OF PREVIOUS MEETING**

Meeting minutes from the TC 8.4 meeting in Seattle were voted. For approval. Chad Bowers took motion, Vikrant seconded. 5 voted in favor, 1 abstained (5-0-1). The meeting minutes was approved by the voting members.

VII **Chairman's notes on TC chair meeting:**

Lorenzo read the minutes from the TC chair handout distributed during the breakfast chair meeting. The relevant minutes are attached below.

1. **2014-2015 Hightower Award Recipient – John Carter, TC 4.3**

Mr. John Carter's contributions to ASHRAE TC 4.3 include programs, Handbook Chapters, and a tour through all three officer positions: Secretary, Vice-Chair, and a three-year term as Chair. He is now in his sixth year and third term as Secretary, and Secretary is arguably one of the most and Seminars at the ASHRAE Winter & Annual Conferences are meritorious, and greatly benefit ASHRAE Members.

Mr. Carter's contributions to ASHRAE technical committees and especially to TC 4.3 in the last four years have been exemplary and make him a well deserving recipient of the *George B. Hightower Technical Achievement Award*.

2. **2014-2015 Service to ASHRAE Research Award Recipient – Iain Walker, TC 4.3**

Dr. Walker has been actively involved as a volunteer in some capacity (as a Work Statement Author, a PES member, or PMS member) on at least five different research projects over the past several years. In one case (RP-1478), that work was inspired by the Presidential Ad Hoc Homeland Security Committee, who specifically called for research on test methods for determining building tightness and collection of building tightness data in its May 2006 memo *CBR Strategies and Information/Methods Gaps*. Iain Walker took up that cause as a member of the PES and PMS. Dr. Walker's contributions to ASHRAE technical committees in the area of research and especially to TC 4.3 in the last four years have been exemplary and make him a well deserving recipient of the *Service to ASHRAE Research Award*.

3. **2014-2015 Top TC Award for Section**

TAC has developed a new award call the Outstanding Technical Committee Award. The purpose of the award is to recognize, annually, a single Technical Committee within each TAC Section that has the highest measured performance based on a set of weighted criteria as compared to other TCs within that same Section. The goal of this award is to reward TCs for the behaviors and activities that further the goals of TAC and exhibit excellence in the operation of a technical committee. The criterion used is a point system with values assigned to various metrics and activities, which are collected through the TC activity form. The award will serve to heighten TC Chair and committee member awareness of what activities are valued to encourage improved performance, and foster friendly competition between TCs within a Section.

4. **2015-2016 Roster Update Process & TC Input Deadline**

Remember, the current 2014-2015 roster for your TC, TG or MTG is in effect until after the June meeting this year. The new committee rosters for Society year 2015-2016 will be created based upon the update information that each TC, TG or MTG provides to their section head at **this**

meeting by midnight, Tuesday, 1/27/15 and these new rosters will go into effect on July 1, 2015. Please see your section head for the 2015-2016 Roster Update form if you still need a copy. All changes to the roster should be noted on the roster update form. Changes requested after June 30th are considered emergency roster changes. The following are considered to be valid emergencies:

- Quorum is affected because a voting member can no longer attend meetings due to job change or long-term illness.
- Resignation of Chair or MTG voting member
- Two voting members become employed by the same company
- Error in roster due to mistake by ASHRAE staff
- Addition of new participating group to a MTG

By now, each TC, TG and MTG chair should have received a PDF & MS-Excel file of their 2014-2015 roster from their Section Head for distribution to the committee. In addition, each member can view all of the rosters of their committees on the ASHRAE Website by logging into the member's only section at <http://ASHRAE.org/MyActiveCommittees>. Click on the "blue" roster text at the left hand side of a committee to reveal the roster with linked contact information.

5. TC/TG/TRG Chair's Training Workshop Reminder

Sunday January 25, 9:45-10:45am in Chicago Room (5th floor) in the Palmer House Hilton Hotel. As with the Breakfast meeting, both the Chair and Vice-Chair are expected to attend; attendance will be tracked so that we can assess who has been trained. Bring questions - if you need an answer, it's quite likely others also need the same answer. A main focus of this particular workshop will be the roster update process.

6. TC Activity Form due this Tuesday by Midnight

An electronic copy of your TC Activity form for the Chicago meeting is due to your Section Head before midnight Tuesday, 1/29. Section heads can provide an electronic copy of the form if still needed.

7. ASHRAE Code of Ethics

The BOD's reaffirmation of ASHRAE's Code of Ethics provides an opportunity for sharing and reminding ASHRAE members of their responsibilities under this code. Technical Committees are the major drivers behind ASHRAE's technical content, and thus TC Chairs are at the frontline for ensuring that their committees are performing within the Code of Ethics guidelines. If you have any questions or concerns regarding appropriate conduct, contact your Section Head. A copy of the ethics is also attached to this document.

See the following link for the latest version of the ASHRAE Code of Ethics:

<https://www.ashrae.org/about-ashrae/>

8. Location of TC & Section Head Mailboxes at this Society meeting & Free Wi-Fi Access at this Society meeting

Mailboxes are located just outside ASHRAE Headquarters Office (Salon 3 Room – 3rd Floor – Palmer House Hilton Hotel).

Also, Internet access and computers for e-mail are available in the Cyber Café located in the registration area during operating hours. Please be considerate to others and limit your usage to five minutes.

9. Useful TC/TG/TRG/MTG Chair Information and forms on ASHRAE website

Information for TC/TG/TRG and MTG chairs can be found on the Technical Committee page of the ASHRAE website at the following link: <http://www.ashrae.org/tcs>

The TC/TG/TRG Manual of Procedures (MOP) has been revised to include a new committee type, Multidisciplinary Task Groups (MTGs). MTGs are different from TCs, TGs, and TRGs. The

objective of the MTG is to first try to better coordinate and focus the activities of the affiliated TC and non-TC groups (EHC, REF, SSPCs, outside groups, etc) that make-up the MTG on the task for which the MTG was created without duplicating the functions of a TC or TG so that the task can be completed as efficiently as possible. In special cases, MTGs may also be authorized by TAC to assume some TC/TG functions, such as research, if it is deemed necessary to better complete their task assignment.

Since the need, purpose, and progress of each MTG is reassessed and reaffirmed by TAC each year, there are no term limits for the MTG Chair, Vice Chair, Members and Alternates.

10. New MTGs that have been formed

TAC approved the formation of the following new multidisciplinary task group (MTG):

MTG.O&MEE – Operations and Maintenance Activities That Impact Energy Efficiency

Scope: MTG.OMBE will coordinate TC/TG/TRG activities to help support the application of ASHRAE guidelines, Standards and other technical resources to support regulatory bodies, utilities, building owners and others who are attempting to enhance efficiency of existing buildings.

Responsibilities include suggestions for research, development and presentation of technical programs of all types on maintenance and its impact on energy consumption and efficiency. It will be especially involved with interactions with those who are introducing and evaluating strategies for building efficiency enhancements.

This MTG will maintain interface with and call on the resources of TCs in Sections 2, 4, 6, 7, 8 and 9 and maintain an especially close relationship with Standards 90.1 & 2. It will also maintain a relationship with GGAC. It will both draw on their knowledge and contribute areas of interest that it may be productive for them to consider.

The chair and vice chair of the MTG is Thursten Simonsen and Robert Baker, respectively.

For more information on this MTG and the six other active MTGs, please go to the MTG section on the following web page: <http://www.ashrae.org/tcs>

Also since the 2014 annual meeting, **MTG.HPAS – High Performance Air-handling Systems for Buildings except Low-Rise Residential Building**

Voted to disband as a MTG after completing their charge.

If your TC would like to have a voting representative on a particular MTG, please contact the ASHRAE Manager of Research and Technical Services, Mike Vaughn, at MORTS@ashrae.net.

11. E&P Beta Test #7 TC meetings being Held in Chicago

The 7th beta test of Electronic and Physical (E&P) meetings, which allows some TC members to participate in the TC meeting from a remote location electronically, will occur in Chicago and the following nine TCs have agreed to participate in this test: TC 1.5, TC 2.2, TC 7.9, TC 4.2 (RP-1561 PMS & RP-1699 PMS), TC 6.8, TC 8.4, TC 8.8, and TC 9.2.

The chairs of those TCs participating should provide to their Section Head feedback on their E&P meeting experience before TAC meets on Wednesday morning, 1/28 so that we can continue to improve this new service. Those interested in possibly having E&P capability for their next TC meeting in Atlanta should contact Mike Vaughn (MORTS@ashrae.net)

12. CEC Seeking Track Suggestion for 2016 Annual Meeting in St. Louis & Other Program Information

The Conferences and Expositions Committee (CEC) oversees ASHRAE's annual and winter conferences and other specialty conferences and expositions globally. The CEC continually works to improve the conference experience for all attendees. To help keep a "pulse" on the technical issues facing professionals in the HVAC&R marketplace, the CEC seeks ideas for tracks for the St. Louis 2016 meeting next year and annual and winter conferences beyond as well as topics for specialty conferences from TC members.

Please submit your suggestions to ASHRAE Staff member Tony Giometti (Giometti@ashrae.org)
TC Volunteers needed to help improve the ASHRAE technical program for meetings
Provide to your Section Head after each Society meeting a list of qualified volunteers from your TC that are potential Technical Session chairs and reviewers of session papers that are related to TC's scope for use by the Conferences & Expositions Committee (CEC) in developing technical content for future technical programs.

TC Program Subcommittee Chair Training in Chicago

Please notify your program subcommittee chair that CEC will be offering training to them as follows in Chicago: Tuesday, 1/27, 11:15 a.m. – Noon, Kimball Room, (3rd Floor) Palmer House Hilton Hotel.

Upcoming Program Dates & Orlando Program Tracks

Atlanta Meeting - June 27 – July 1, 2015

- Conference Paper accept/reject notifications sent January 30, 2015
- Seminar, Forum and Workshop Proposals Due on February 9, 2015
- Revised Conference Papers/Final Technical Papers due February 13, 2015
- Conference and Technical Paper Final Accept/Reject Notifications sent Feb. 27, 2015
- Seminar, Forum, Workshop Accept/Reject Notifications sent March 23, 2015
- All PPTs Due Online by June 5, 2015
- Final Day for Commercialism Revision Upload prior to on-site by June 17, 2015
- Speaker's Lounge Opens on June 27, 2015
- Conference Website: <http://www.ashrae.org/atlanta/>

Seminar and Forum proposals for Atlanta are due by Monday, February 9th, 2015. Please visit the following site for more information and to submit your proposal:

www.ashrae.org/atlanta

Orlando Meeting - January 23 - 27, 2016

- Conference Paper abstracts due on March 23, 2015
- Conference Paper Abstract Accept/Reject Notifications sent April 6, 2015
- Technical papers due by April 20, 2015
- Website Opens for Seminar, Forum and Workshop Proposals on June 4, 2015
- Final Conference Papers Submitted for Review by July 6, 2015
- Conference Paper accept/reject notifications sent August 3, 2015
- Seminar, Forum and Workshop Proposals Due on August 10, 2015
- Revised Conference Papers/Final Technical Papers Due on August 21, 2015
- Conference and Technical Paper Final Accept/Reject Notifications sent August 28, 2015
- Seminar, Forum, Workshop Accept/Reject Notifications sent September 11, 2015
- Conference Website: <http://www.ashrae.org/orlando/>

Program Focus at Orlando Winter Conference

• **Track 1: Systems and Equipment**

Selection of equipment and systems is paramount to HVAC&R design. Papers and programs in this track will assist designers, engineers, and operators in the design, selection, and operation of HVAC&R systems and equipment.

Track chair: Gary C. Debes - gcdebes@verizon.net

• **Track 2: Fundamentals and Applications**

Fundamentals are the foundation for understanding applications in engineering. Key components of ASHRAE fundamentals include thermodynamics, psychrometrics, fluid and mass flow, IAQ,

and building envelope. This track provides opportunities for papers and presentations of varying levels across a large topic base. Concepts, design elements and shared experiences for theoretical and applied concepts of HVAC&R design are included.

Track chair: Cynthia Moreno - cindym@tmmechanical.com

- **Track 3: Design Build**

Joining the contractor and the designer into the same team, the design-build method of project delivery is increasing in percentage of projects awarded in the US. This track explores the challenges and benefits of D-B project delivery. Highlight successful projects; discuss contracts; review management responsibilities; offer alternative design and construction processes. These topics and more will be included.

Track chair: James Liston - jfliston@verizon.net

- **Track 4: International Design**

Design for various environmental elements, geography and culture demand that new and innovative strategies be developed. As an international organization, ASHRAE strives to meet the needs of a global membership. HVAC&R systems vary globally and this track provides an opportunity to share innovative and necessary design elements that can be shared internationally.

Track chair: Leon Shapiro - leoneshapiro@gmail.com

- **Track 5: Standards, Guidelines and Codes**

ASHRAE is known for its standards and design guidelines – and they are constantly evolving with the intent on improving the built environment and its systems. Designers, Contractors, Architects and Owners must be able to keep up with the continuing changes in the current cycle but to also be prepared for the future changes. In addition, there is a large interaction of ASHRAE with the code authorities and government to incorporate these standards and guidelines. The series of sessions in this track highlight the changes to the standards and guidelines, their projected path and optimum design techniques to meet or exceed the standards.

Track chair: Michael Collarin - Michael.Collarin@parsons.com

- **Track 6: Cutting-Edge Technologies**

As energy codes become increasing more stringent, we are challenged to find creative ways to improve efficiencies in the effort to achieve net zero buildings. This track will include the most recent advances in HVAC&R system design, equipment, and construction techniques. Programs included will focus on efficiency, responsible use of resources and energy recovery.

Track chair: Ann Peratt - agregg.ksu@gmail.com

- **Track 7: The Great Debate**

Engineers commonly weigh multiple solutions to find the best match for a certain project. Centralized or Decentralized heating and cooling? Chemical or non-chemical water treatment? These sessions and papers will present divergent methods for accomplishing the same task. Hear all sides of the debate and decide for yourself.

Track chair: Chuck Curlin - ccurlin@shultzeg.com

- **Track 8: Modern Residential Systems**

Engineering for residential HVAC and plumbing systems and equipment used to be referred to as catalog engineering: for a two bedroom house choose one from Column A; for a three bedroom house choose one from Column B. Recent years have seen a boom in energy efficient solutions for the savvy, fiscally-conscience home owner. From glazing to water heating to lighting, this track will provide you with the latest advances for the residential market.

Track chair: Rocky Alazazi - mralazazi@yahoo.com

For more information, go to: www.ashrae.org/orlando

13. Section Head Report on TC/TG/TRG websites in Section

Is your committee website up to date? If not, please ask your webmaster to at least post the latest minutes and the Chicago meeting times and agenda. If your website has been neglected, add an action item for this meeting to appoint a responsible member of the TC/TG/TRG who will bring it back to life. This form of communication is critical to the efficient operation of your committee, and for attracting new members.

TAC and the Electronic Communications Committee (ECC) recently posted a webinar recording on how to set-up and maintain a basic TC website using the ASHRAE server and TC website template at the following link: <http://media.ashrae.biz/webinar/TrainingWebinar.avi>

14. New TAC Presentation template can be used by TC members to make a presentation to their local Chapter

The new presentation template allows TC members, without a lot of effort, to give a presentation to their local chapter on TAC and the TCs in general and to also customize a few slides with information specific to their own TC or TCs. The template is posted now on the Technical Committee page of the ASHRAE website for download.

15. Does your TC Have an Idea for a New ASHRAE Learning Institute (ALI) course?

The Professional Development Committee (PDC) is seeking ideas for new ASHRAE Learning Institute (ALI) courses. The need is for practical courses of broad interest, ranging from face-to-face seminars, short courses, online courses, and self-paced courses. Examples would include courses with a focus on new technologies that need to be shared, fundamentals that may have been forgotten, standard applications that need explanation, and courses based from new design guides. The objective of the ASHRAE Learning Institute (ALI) is to provide quality, authoritative and practical technical information of broad interest.

Please submit your new course ideas to Karen Murray kmurray@ashrae.org (ASHRAE staff) or Darin Nutter PDCchair@ashrae.net (PDC chair).

16. New Presentation Developed on TCs and ASHRAE Code Interactions

Model codes (codes that are intended to be used as a model for jurisdictions to adopt at the state and local level) are being revised at a fairly rapid rate. ASHRAE Staff has been interacting with some TCs to ensure that model codes do not prevent sound engineering practice in the HVAC&R world. ASHRAE has a path for establishing official ASHRAE positions on proposals, and a mechanism to submit proposals and comments to model code organizations. If approved in accordance with ASHRAE procedures, ASHRAE Staff will represent positions of the Society in the model code development process. Many TCs are unaware that such a mechanism exists, and a new presentation has been developed for posting on the TC page of the ASHRAE website www.ashrae.org/tcs intended to provide some additional information on how TCs 1) can help ASHRAE write more enforceable documents/standards, and 2) can provide input to the code development process through ASHRAE.

17. Special effort to welcome new members, and visitors (potential members), particularly international members, to TC meetings

Potential new members for your committee have been encouraged to drop-by your meeting in Chicago. As a result, please make a special effort to recognize and warmly welcome all visitors to your meeting – A TC can never have too many willing and able volunteers.

18. Option for TC Subcommittee Meetings via Conference Calls and Web Meetings

More and more TCs are taking advantage of a new Society service that allows TCs to hold subcommittee meetings by phone and/or web. Many TCs are finding this to be a more efficient way

for them to conduct subcommittee business and it also allows TC members that can't travel to meetings on a regular basis a way to still contribute to the TC. Such a change can also eliminate potential conflicts with the TC's program sessions at Society meetings. Please pass your conference call/web meeting/webinar requests on to the Manager of Research and Technical Services, Mike Vaughn, at mvaughn@ashrae.org or MORTS@ashrae.net

19. Employment Discipline added to ASHRAE BIO Online Input Form

A new input field titled Employment Discipline has been added to the ASHRAE online member (BIO) graphical input form and **TAC would like ALL TC members to self-declare their employment discipline prior to the start of the new Society year on July 1, 2014** by going to the Members Only section

(<https://eweb.ashrae.org/eweb/DynamicPage.aspx?Site=ASHRAE&WebKey=8396a37a-9fc2-4f50-9332-5eebebe73494>) and enter their employment discipline information. The link should take you directly to the screen, which is located under demographics.

You will need your login and password to enter. Employment Discipline is located in the third section.

Employment Discipline	
category:	Government and Organizations
discipline:	Not-for-Profit Organization (USGBC, Habitat, etc.)

Once you have made the necessary updates, save the changes and logout.

Employment Disciplines:

Academic

- Academic - Professor/Staff
- Academic – Student

Government and Organizations

- Government - Federal (e.g., DOE, EPA, USDA)
- Government - National Lab (e.g., ORNL, NIST)
- Government - Local (e.g., city or state governments)
- Not-for-Profit Organization (USGBC, Habitat for Humanity, etc.)
- Trade Association (ACCA, SMACNA, etc.)

Building Industry

- Architect
- Building Owner / Management Firm
- Consultant
- Contractor
- Designer
- Facilities Manager/Operator

Manufacturing Industry

- Manufacturer
- Manufacturer
- Manufacturer – Sales
- Manufacturer's Representative

Other

Model Code Organization

- Retired
- Utility
- Other

Thus far, approximately **30%** of TC Members have declared their discipline.

20. Upcoming Workshops and Conferences:2015

- **International Air-Conditioning, Heating, Refrigerating Exposition (AHR Expo) – 2015 - January 26 – 28, 2015 - Chicago, IL – Contact: <http://www.ahrexpo.com/>**
- **2015 HVACR & Mechanical Conference for Education Professionals – March 9 to 11 – Baltimore, Maryland – Contact: <http://careersinhvacr.org/site/306/HVACR-Mechanical-Conference>**
- **2015 ASHRAE Webcast – New Tomorrows for Today’s Buildings: Existing Building Commissioning – April 23, 1 - 4 pm EDT – Contact: <https://www.ashrae.org/membership--conferences/webcasts> - Contact:**
- **Advanced HVAC and Natural Gas Technologies - May 6 – 9, 2015 - Radisson Blu Hotel, Riga, LATVIA – Contact: <http://www.rtu.lv/en/>**
- **2015 International Conference on Energy and Environment in Ships - May 22 – 24, 2015 - Athens, Greece – Contact: <https://www.ashrae.org/membership--conferences/conferences/2015-international-conference-on-energy-and-environment-in-ships>**
- **ISHVAC-COBEE 2015: 9th International Symposium on Heating, Ventilation and Air Conditioning (ISHVAC) and 3rd Conference on Building Energy and Environment (COBEE) - July 12 – 15, 2015 - Tianjin, CHINA – Contact: <http://www.cobee.org/>**
- **ICR2015 (24th IIR International Congress of Refrigeration) - August 16 – 22, 2015 - Yokohama, JAPAN – Contact: <http://www.icr2015.org/index.html>**
- **Cold Climate 2015 - October 20 – 23, 2015 - Dalian, CHINA – Contact: <http://www.coldclimate2015.org/>**
- **11th International Conference on Industrial Ventilation - October 26 – 28, 2015 - Shanghai, CHINA – Contact: <http://www.ventilation2015.org/>**
- **IBPSA 2015 (14th International Conference of the International Building Simulation Conference) – December 7 – 9, 2015 - Hyderabad, INDIA – Contact: <http://www.bs2015.in/>**

2016

- **International Air-Conditioning, Heating, Refrigerating Exposition (AHR Expo) – 2016 - January 25 – 27, 2016 - Orlando, FL – Contact: <http://www.ahrexpo.com/>**
- **CLIMA 2016 - May 22 – 25, 2016 - Aalborg, DENMARK – Contact: <http://www.clima2016.org/welcome.aspx>**
- **IAQVEC 2016 (9th International Conference on Indoor Air Quality Ventilation & Energy Conservation in Buildings) – Oct. 17 – 19, 2016 - Seoul, SOUTH KOREA – Contact: <http://iaqvec2016.org/>**
- **2016 Purdue Conference – July, 2016, exact date TBD**

21. Upcoming TC Award Nomination Submission Deadlines**2015-2016 Hightower Award Nomination Process and Deadline**

Nominations for the 2015-2016 George B. Hightower Technical Achievement Award are due to you Section Head by **September 1, 2015**. The award recognizes outstanding technical leadership and contributions on a TC/TG/TRG during the past four years, excluding research and standards activities. Please go to the Technical Committee page of the ASHRAE website at the following link under the “Procedures and Forms...” heading: <http://www.ashrae.org/tcs>

2015-2016 Service to ASHRAE Research Award Nomination Process and Deadline

Nominations for the 2015-2016 Service to ASHRAE Research Award for TC volunteer efforts in research are due to RAC research liaison by **September 1, 2015**. Please go to the Research page of the ASHRAE website at the following link under the “Research Grants and Awards” heading: <http://www.ashrae.org/research>

22. PEC On-line Orientation Modules Now Available on Effective Meetings and other Useful Topics

New on-line orientation modules are now available at the link below on following subjects:

- ASHRAE Structure, Councils and Committees
- Budgets and Financial Statements
- Conducting Effective Meetings
- Strategic Planning

<https://www.ashrae.org/society-groups/councils#pubed>

ASHRAE Code of Ethics

(Approved by ASHRAE Board of Directors January 30, 2013)

1.140.001.1 As members of ASHRAE or participants in ASHRAE committees, we pledge to act with honesty, fairness, courtesy, competence, integrity and respect for others in our conduct.

A. Efforts of the Society, its members, and its bodies shall be directed at all times to enhancing the public health, safety and welfare.

B. Members and organized bodies of the Society shall be good stewards of the world’s resources including energy, natural, human and financial resources.

C. Our products and services shall be offered only in areas where our competence and expertise can satisfy the public need.

D. We shall act with care and competence in all activities, using and developing up-to-date knowledge and skills.

E. We shall avoid real or perceived conflicts of interest whenever possible, and disclose them to affected parties when they do exist.

F. The confidentiality of business affairs, proprietary information, intellectual property, procedures, and restricted Society discussions and materials shall be respected.

G. Each member is expected and encouraged to be committed to the code of ethics of his or her own professional or trade association in their nation and area of work.

H. Activities crossing national and cultural boundaries shall respect the ethical codes of the seat of the principal activity.

- **REMARKS FROM SOCIETY LIAISONS TO TC/TG/TRG CHAIRS**
RESEARCH LIAISON REPORT

None at this time

- **LIAISON REPORTS FROM OTHER COMMITTEES**

None at this time.

- **SUBCOMMITTEE REPORTS**

- **PROGRAM SUBCOMMITTEE– OMAR ABDELAZIZ FOR ED VINEYARD**

- **General Comments and upcoming conferences:**

- For Atlanta meeting (next meeting), it is proposed to have a seminar session, titled “Heat Transfer in Advanced Heat Exchanger”. Omar Abdelaziz, Man-Hoe Kim and Ebrahim Al Hajri intended to present.
- There will also be a conference session in Atlanta meeting. Yang Zou, Lorenzo Cremaschi, Omar Abdelaziz intend to submit paper. Chad Bowers will chair the session. The deadline to submit the program is Fe 9th, 2015.
- For Orlando meeting: paper abstract is due Mar 23rd, 2015. The deadline for technical paper is Apr 20th, 2015 and the deadline for conference paper is Jul 6th, 2015. The topic is proposed to be “Design of Heat Exchangers with High-glide Refrigerant”. Lorenzon Cremaschi, Ankit Sethi and Gustavo Potter will submit papers (3 in total).

Vikrant Aute took motion for approval. Chad Bowers seconded. 4 approved, 2 abstained (one in the e-meeting had left the meeting, the other is one of the two VMs from the same company).

RESEARCH SUBCOMMITTEE – CHAD BOWERS

Update from research breakfast

- Service to ASHRAE Research Award – Iain Walker from TC4.3
- Grants-in-Aid – 59 applications reviewed, 21 approved
- Homer Adams Award – given to deserving graduate student who participated in and ASHRAE sponsored research project. Given to Limin Zhou (University of Kentucky) for work on RP1517: A design approach for preventing and solving combustion oscillation problems
- New Investigator Award – 14 nominees, recipient to be named later

- RTAR and WS reviewed by RAC – 4 RTARs reviewed (3 conditionally accepted, 1 rejected with comments), 8 WSs reviewed (5 conditionally accepted, 2 returned with comments, 1 rejected with comments)
- TRPs & URPs – 6 TRP's were approved for bid, 7 will be reviewed by RAC on Wednesday January 28th. 1 URP is under review by RAC and the appropriate TC(s)
- Current Research – 59 active projects totally \$11.0 million, 5 projects started since July 2014, 15 new projects approved for bid, no projects on hold due to funding
- TC Research Voting – Quorum needed to conduct business, 2/3 of voting members needed for approval of RTAR's, WS's, and Research Reports
- New easier to use RTAR form
- WS form and requirements being upgraded to include Go/No Go criteria to allow PMS to exercise better control over payment approval
- RAC evaluation and approval process being streamlined
- Any suggestions to improve efficiency of research process should be provide to Michael Vaughn (mvaugh@ashrae.org) or Kishor Khankari (kishork@ansight.com) by March 1st, 2015

Active Research Projects

Intermediate Results from both RP1564 and RP1535 were presented in a Seminar as part of the conference technical program

1. Project 1564 Measurement of Oil Retention in Microchannel Heat Exchangers

Contractor: Prof. Cremaschi, Oklahoma State University

Project Monitoring Subcommittee: Samuel Yana Motta, Amir Jokar, Yi Qu, Omar Abdelaziz

PI presented most up to date results to subcommittee. Testing and report nearly completed. A no-cost extension until July 1st, 2015 will be requested to provide sufficient time for review, revision, and TC vote on final report.

2. Project 1535 Heat Transfer and Friction Factor for Low Air Reynolds Numbers of Compact Heat Exchangers

Contractor: Prof. Cheng-Xian (Charlie) Lin, Florida International Univeristy

Project Monitoring Subcommittee: Chad Bowers, Aaron Conger, Omar Abdelaziz, Xudong Wang, Stanislav Perencevic

PI presented most up to date results to subcommittee. Testing and report nearly completed. A no-cost extension until July 1st, 2015 will be requested to provide sufficient time for review, revision, and TC vote on final report.

3. Project 1645 Development of New Corrosion Test for Aluminum Heat Exchangers

Contractor: Prof. Seifollah Nasrazadani, University of North Texas

Project Monitoring Subcommittee: David Ellerbrock, Hyunyoung Kim, Russell Tharp, Xudong Wang, Claudi Martin

PI brief presented overview of literature survey and purchase of equipment required for testing. Project on track.

4. TRP 1705 Investigation of Airside Fouling on Outdoor Heat Exchangers. Bids under review by PES

Potential Research Projects

- Reverse flow in microchannel heat exchangers suggested by Bill Fox – Bill continuing to work on this idea
- Acoustic issues in microchannel heat exchangers – Sankar Padhmanabhan is continuing to work on an RTAR for this topic. Would like some input on relevant literature. Chad Bowers to send references on studies conducted by University of Illinois
- Omar Abdelaziz and Ankit Sethi will work on finishing an RTAR entitled “Heat Transfer and Pressure Drop of Low GWP Refrigerants in Small Diameter Tubes”. This should be one of our higher priority RTAR’s
- Sankar Padhmanabhan reworked an RTAR for NH₃ in U-bends for TC 1.3. Will forward to TC8.4 for review in interest of co-sponsorship.
- Unconventional materials for heat exchanger construction (i.e. polymer heat exchangers) and novel manufacturing techniques - Shenghan Jin agreed to keep looking into the topic and thinking about how to structure a possible RTAR. Difficulty in clearly defining research goals of such a project. Will look into previous AHRI project to see if there is a good starting point. Suggested to give Research Liaison a very early draft to get input on how to best frame this as ASHRAE research.
- Co-sponsorship of Dry condition, heat exchanger with TC 6.3 - potentially interested, but will wait for TC6.3. No clear recollection of where/who this idea came from. If no lead is identified for this, it will be dropped from list of ideas
- Rotating Heat Exchangers (Sandia Cooler) – no discussion
- Novel methods for defrost - No clear recollection of where/who this idea came from. If no lead is identified for this, it will be dropped from list of ideas
- Additional oil retention studies to add on to the data and modeling efforts from Project 1564. Chad Bowers agreed to work on framing a new RTAR that will use RP 1564 as a springboard for the next step in similar work
- High pressure events in microchannel condensers - No clear recollection of where/who this idea came from. If no lead is identified for this, it will be dropped from list of ideas
- Co-sponsorship of an RTAR from TC1.3 on Tube Side Coatings for Enhancements in Evaporative Condensers- No clear recollection of where/who this idea came from. If no lead is identified for this, it will be dropped from list of ideas
- Amir Jokar gave a brief update on the submitted RTAR. The RAC had rejected the RTAR and strongly recommended to drop the topic. It will be dropped from the list.

New Ideas

- As many of the current ideas are primarily experimental, it was suggested that the TC think about adding simulation/numerically based work to research idea. Discussed were airside modelling, and in-tube physical models to predict heat transfer and pressure drop. No clear lead identified to work on specific RTAR(s), at this point.

STANDARDS SUBCOMMITTEE – RAYMOND RITE REPORTED FOR GARY PRICE TO THE MAIN TC

Standard 33 – Method of Testing Forced Circulation Air Cooling and Air Heating Coils.
Mary Opalke from AHRI gave update: the committee had meetings that met quorum and voted to approve the standards. After formatting, it will be out for public review in mid-February.

Standard 25 – Forced and Natural Convection Air Coolers
Gordon Struder gave brief update. The committee had difficulty meeting the quorum and planned to have 2-3 meetings before June (next ASHRAE meeting).

Standard 20 - Method of testing for Air Cooled Condensers
Ray Rite gave brief update. The committee met but did not meet quorum (3/6). The committee planned to have 1 more meeting before June (next ASHRAE meeting).

HANDBOOK SUBCOMMITTEE – BILL FOX

Bill Fox gave an update. Three chapters (23, 27, and 39) have been reviewed. No major changes were made. They will be out for public review before next meeting.

MEMBERSHIP – LORENZO CREMASCHI FOR LIPING LIU

Lorenzo Cremaschi gave a brief update. As of today we have 9 voting members and 89 corresponding members on the TC, for a total of 98 members. There are currently 65 corresponding members that have been confirmed by email to be interested in remaining CM of the TC. The remaining 33 have either not responded to the email or are not interested in being CM of this TC anymore. The subcommittee will maintain a list of CMs up to date.

Starting 07/01/2015, the VMs will be as follow:

Voting Members as of 07/01/2015	End of term (Jun 30 of...)
1. Dr. Lorenzo Cremaschi (chair)	(2016)
2. Dr. Sankar Padhmanabhan (vice-chair)	(2019)
3. Dr. Chad Bower (research sub. chair)	(2018)
4. Mr. Shenghan Jin (secretary)	(2019)
5. Dr. Vikrant Aute (MTG LowGWP Liason)	(2016)
6. Dr. Kashif Nawaz	(2019)
7. Dr. Liping Liu (membership)	(2018)
Voting Member non-quorum in this meeting	
8. Prof. Man-Hoe Kim	(2018)
9. Dr. Hyunyoung Kim	(2017)
Total VMs (excluding non-quorum)	7
Total VMs including non- quorum	9

And the officers will be as follows:

Officers TC 8.4 as of 07/01/2015		
1.	Dr. Lorenzo Cremaschi	Chair (until 6/30/2016)
2.	Dr. Sankar Padhmanabhan	Vice-chair
3.	Dr. Chad Bower	Research sub. Chair
4.	Mr. Shenghan Jin	Secretary, honors and awards
5.	Dr. William Fox	Handbook
6.	Mr. Ed Vineyard	Programs
7.	Mr. Gary Price	Standards
8.	Dr. Yi Qu	Webmaster
9.	Dr. Liping Liu	Membership
10.	Dr. Vikrant Aute	MTG Low GWP Liason

WEBSITE – LORENZO CREMASCHI FOR YI QU

The website is in good shape and includes the new logo. Contents are up to date.

HONOR AND AWARDS NOMINATION- SHENGHAN JIN

Shenghan Jin gave brief update. It was decided last meeting to have members disclose their contributions and activities for awards nomination. However no disclosure has been received.

Lorenzo Cremaschi agreed to help improve the nomination process.

The detailed awards and nomination process can be found at

(<https://www.ashrae.org/membership--conferences/honors--awards/ashrae-honors-and-awards-program#howtonom>)

IX MTG LIAISON REPORT

MTG. Low GWP Scope

This MTG is established to coordinate TC/TG/TRG technical activities to help transition the HVAC&R industry to sustainable lower Global Warming Potential (GWP) alternative refrigerants. The MTG will further request participation from US EPA and AHRI. The MTG responsibilities include suggestions for research, development and presentation of technical programs of all types on alternative lower GWP refrigerants, suggestions for Life Cycle Climate Performance (LCCP) systems evaluation for different applications, development of lower GWP solutions for different applications, and a special publication detailing aspects of LCCP applied to the HVAC&R fields.

TC 8.4: Liaison – Vikrant Aute, Alternate Member: Hyunyoung Kim.

MTG.Low GWP had the interim teleconference on Jan 12th, 2015

Highlights

- 4 (out of 5) Co-sponsored programs accepted for ASHRAE Chicago
- Idea of hosting a mini-Conference on Low GWP Refrigerant at 2016 Annual meeting is being considered
- AHRI-AREP Phase-2 update
 - 15 refrigerant (60 samples) will be sent to participating organizations
 - Majority of results are expected to be available by Fall 2015
- IIR LCCP Working Party Update
 - Draft guideline for LCCP evaluation was proposed and is being reviewed. Next WP meeting is on Jan 27th, during ASHRAE

- Next MTG meeting will be on Jan 28th, 2015 (last day of ASHRAE) followed by an interim telecon sometime in April, 2015.

TC agreed that Vikrant Aute will represent TC 8.4 for the next year (2015-2016).

X OLD BUSINESS

None.

XI NEW BUSINESS

None.

XII ADJOURNMENT

Motion to adjourn meeting at 5:28pm.