



AGENDA - ASHRAE MEETING – Las Vegas
TC 2.3 - Gaseous Air Contaminants/Removal Equipment
TC Meeting

Tuesday (1/31/17), 1:00 pm - 3:30 pm
(Pompean II)

Meeting membership attendee list is as follows:

Last Name	Name	Member Status	Position	Present
Total Voting Members = 10 out of 13 in attendance				
Agopian	Mr. Nick Agopian	VM	Member	-
Bayer	Dr. Charlene W. Bayer, PhD	CM	TC Chair	P
Choi	Dr. Kyung-Ju Choi, PhD	VM	Program Chair	P
Freeman	Mr. Peter Freeman	VM-NQ	Member	P
Hingorani	Dr. Sanjeev Hingorani, PhD	VM	Secretary	P
Levasseur	Ms. Paula Levasseur	VM	Vice Chair/ Webmaster	P
Listvan	Dr. Marilyn Listvan	VM	Program co-chair	P
Mathur	Mr. Ashish Mathur	VM	Member	-
Muller	Mr. Christopher Muller	VM	Member	P
Owen	Ms. Kathleen Owen	VM	Research Chair	P
Sherwood	Scott Sherwood	VM-NQ	Member	P
Zaatari	Dr. Marwa Zaatari, PhD	VM	Member	P
Middlebrooks	Mr. Matt Middlebrooks	NV	Membership Chair	-
Tronville	Dr. Paolo M. Tronville, PhD	NV	Standards Chair	-

Summary of Motions

#	Motion	Vote
1	Motion to approve TC2.3 minutes from St Louis, , Paula Levasseur 1st, Marilyn Listvan 2nd	9-0-0-10 CNV
2	Motion to approve Panel Discussion The Evidence-based Effectiveness of Electronic Air Cleaners. Christopher Muller 1st, Marilyn Listvan 2nd	9-0-0-10 CNV
3	Motion to cosponsor a Seminar Development of low-cost multi-use sensors for buildings that can detect possible hazardous biological or chemical agents. Paula Levasseur 1st, Marilyn Listvan 2nd	9-0-0-10 CNV
4	Motion to approve Seminar You bet your life: Filtration doesn't matter!. 1st Marilyn Listvan, Paula Levasseur 2nd	9-0-0-10 CNV

Summary of Action Items

#	Action Item	Owner	Meeting Initiated	Update at Last Meeting	Status
4	Populate TC Research Roadmap to generate research for full scope of TC 2.3	Paula Levasseur	St. Louis	Paula has posted and set it out.	Ongoing
5	Workshop on performance rating system summary to be sent out.	Ashish Mathur	Atlanta	No update	Open
9	Work with TC 5.10 to draft RTAR on ozone in cooking exhaust. (1614)	Brian Krafthefer, Marwa Zaatari	Atlanta	Proposal submitted no response recvd, might need co-sponsorship from us and TC 2.9. Brian and will continue to be part of the PMS. If required we will do a letter ballot before June if reqd.	Ongoing
11	Collection of TC member bibliography papers for website posting	Marilyn Listvan	Atlanta	3 years LinkedIn page ASHRAE TC2.3 outreach. Has 999 Papers. Send her more papers with details. Will create bibliography on TC2.3 website. Work in progress	Ongoing
15	Development of a course on gas phase filtration to be part of ASHRAE supported classes and sent to chapters. Send the TC 2.4 presentation as an example	Paula Levasseur /Brian Krafthefer	Atlanta	Paula Levasseur will take the lead and Brian Krafthefer will assist	Open
16	Development of a translation into research webinar on	Ashish Mathur, KJ Choi	Atlanta	No Update. Will put it aside for a while	Delete



#	Action Item	Owner	Meeting Initiated	Update at Last Meeting	Status
	gas phase filtrations				
18	Locate TC 2.3 slide for ASHRAE	Brian Krafthefer	Atlanta		Completed
19	Send email to all YEA members attending TC2.3 asking what their interest is and what can TC 2.3 do for them.	Paula Levasseur	Orlando		Completed
19	Send RTAR presentation done by Brian to Paula for posting on website	Brian Krafthefer Paula Levasseur	Orlando		Completed
20	Paolo has asked to change standards time slot to publication time slot on Monday 3-4 or at 2:15 on Monday	Charlene Bayer	Orlando		Completed
21	Marwa Zaatari wants to be a Liaison of TC2.3 to Impact of ASHRAE Standards and Technology on Energy Savings/Performance. Send an email to Chair of the MTG	Charlene Bayer	Las Vegas		
22	Start an email discussion between TC 2.3, TC 2.4 TC 2.9 & SSPC 145 Regarding starting an MTG to see how to use/test devices	Paula Levasseur	Las Vegas		
23	Setup Base camp site for TC2.3 Research	Charlene Bayer	Las Vegas		
24	Sanjeev to send out WS 1579 with track changes to Charlene to	Sanjeev Hingorani	Las Vegas		

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	decide if it needs to be voted again				

1. Meeting was called to order by Chair @ 1:01pm
 - a. *ASHRAE Code of Ethics*- all present were advised of the ASHRAE code of ethics.
 - i. The ASHRAE Code of Ethics is to be adhered to by those doing ASHRAE business whether or not they are an ASHRAE member. The Code of Ethics can be reviewed at the below link.
 - ii. <https://www.ashrae.org/about-ashrae/ashrae-code-of-ethics>
 - b. Guests and members introduced themselves and their affiliation.
 - c. It was determined that there was a Quorum with 11 of 13 voting members present.
 - i. Voting Membership for this meeting: Charlene Bayer, Paula Levasseur, Sanjeev Hingorani, KJ Choi, Kathleen Owen, Peter Freeman, Scott Sherwood, Chris Muller, Marwa Zaatari, Nick Agopian, Daniel Haas, Marilyn Listvan, and Ashish Mathur
 1. 13 Voting Members
 2. > ½ Voting Members Present (7) (Yes/No) Yes 11
 3. 6 YEA attended the meeting
 - d. *Reporting from ASHRAE liaisons.* Pawel Wargocki: We were advised that there are 3 awards that RAC is giving – New Investigator Award for \$125,000 -Dec 2017, A grant for students working on projects of interest to ASHRAE- \$10,000 in spring of 2017, Homer Addams award for the student who performs outstandingly \$ 5,000-Dec 2017. RAC is looking for volunteers – contact Pawel Wargocki or RAC Chair if you are interested in joining RAC. Mike Vaughn is asking for increase in budget for research for 3 years. Write more RTAR and you can bid on those projects too.
 - e. *Chair's Report*
 There are 2 new Multidisciplinary Task Groups (MTGs)
 1. Impact of ASHRAE Standards and Technology on Energy Savings/Performance
 2. Occupant Behavior in Buildings
 TC 2.3 needs to decide if we want to be a part of either of them. We need to designate one member as a liaison.
 Another MTG.ACR (Air Change Rate) is also looking for a liaison
 ASHRAE will allow white papers on the website.
 There is a new template you must use if you are going to do presentations for chapters. It can be found on the ASHRAE website.
 ASHRAE has a new online tool called “basecamp” you can request one be set up for the TC to allow everyone to see and view documents in progress.

ASHRAE would like some subcommittees to hold their meetings over the web. This needs to be reviewed further and discussed.

ASHRAE wants reviewers, please advise if you are interested you may contact ASHRAE directly or Charlene Bayer can forward your name.

2. Draft minutes from ST Louis were reviewed. Paula Levasseur motion to accept Marilyn Listvan 2nd , motion passed 9-0-0-10 CNV

3 Review of Action Items from Last Meeting

- a. Publications Subcommittee Meeting space and time – Brian Krafthefer (Charlene Bayer handled)- completed
- b. Populate the TC Research Roadmap with ideas on how to generate research for full scope of TC2.3 – Planning Committee, Paula Levasseur will begin and present ideas in Las Vegas
- c. Working with TC5.10 to draft RTAR on ozone in cooking exhaust – Marwa Zaatari and Brian Krafthefer- This is on hold pending Brian's return
- d. Collection of TC member's bibliography papers – Marilyn Listvan in process. Several have been turned in.
- e. Development of course(s) on gas phase filtration to be part of ASHRAE supported classes and sent to chapters. Send out the TC2.4 presentation that currently is sent to chapters – Brian Krafthefer none from TC 2.4 – on hold
- f. Send email to all YEA members attending TC2.3 asking them their interests and how TC2.3 can help them Paula Completed
- g. Performance rating system for gas phase filters – Ashish Mathur to review

3. Subcommittee Reports

- a. *Handbook - Subcommittee Chair – Brian Krafthefer*
Chapter 11 is now complete currently waiting for ASHRAE comments. Working on Chapter 46 HVAC application and this need to be completed by middle of 2018
- b. *Membership - Subcommittee Chair -- Matt Middlebrooks*
We currently have 13 voting members. After June meeting, 1 member K J Choi is rolling off and we will have 4 members rolling on (submitted to ASHRAE) which are Brian Krafthefer, Kevin Kwong, Chang-Seo Lee & Paolo Tronville making a total of 16 voting members.
- c. *Planning - Subcommittee Chair – Paula Levasseur*
All action items were reviewed and can be found in the minutes. Everybody invited to come to the meeting. This is the place where we decide what we will be doing in TC2.3 in the next 3 years. Major discussion was to use the website for educational purposes. Promote TC2.3 through all social medias if possible. There is a PowerPoint started by Brian Krafthefer showing a 10 year plan corresponding to AHSRAE long term plan was a good format. This will be updated shortly.
- d. *Professional Development Coordinator -- Barney Burroughs- no report*

e. *Program - Subcommittee Chair -- KJ Choi-*

1. For Long Beach – there is two seminar and one panel discussion
2. Panel Discussion The Evidence-based Effectiveness of Electronic Air Cleaners (TC 2.4, TC 2.3, MTG4.IAQP, TC 2.9, 62.1). Motion passed 9-0-0-10-CNV
3. Seminar Development of low-cost multi-use sensors for buildings that can detect possible hazardous biological or chemical agents (TC2.4, 7.1). Russ Taylor champion. Motion passed 9-0-0-10-CNV
4. Seminar You bet your life: Filtration doesn't matter!. (TC2.4, 2.9). M Listvan champion. Motion passed 9-0-0-10-CNV

f. *Publications - Subcommittee Chair -- Marilyn Listvan*

- i. Publication time slot which is Monday afternoon 3-4 PM. We will be using that for presentation. Brian will be presenting "will your filter be alive 2035"
- ii. Send papers and reference material so they can be made available on the TC website and LinkedIn page

g. *Research - Subcommittee Chair -- Kathleen Owen*

- i. Notes from Research Chair Breakfast on Monday Morning after the Research committee meeting
 - a. Only 3 RTAR's submitted for consideration in Las Vegas and all of them were accepted
 - b. Only 4 work statements were considered in Las Vegas. 1 conditionally accepted and 3 returned with comments
 - c. Innovative Research Grant (IRG) - 33 pre-proposals rec'd, 6 qualified to move forward to full proposals. (only one will be funded)
 - d. Grant in Aid for Undergrad or graduate students - \$10K, due in March
 - e. There is a new research manual. Kathleen will find this and see what changes we need to make, if any.
 - f. PMS Training - Soon there will be a training session setup for PMS chairs and members. We will be notified when it is scheduled. Later the module will be available on-line.
 - g. Pawel and Kathleen talked to Mike Vaughn during the meeting. Mike will put 1579-WS on the RAC schedule for a 5-min presentation to RAC on Sat morning in Long Beach.
- ii. 1720-WS Validation of gas-phase air-cleaner performance test method (Standard 145.2) by laboratory testing of commercially available filtration devices was accepted and will go out for bid this spring.
- iii. 1579-WS Testing and Evaluation of Ozone Filters for Improving IAQ was returned as being too similar to 1720. Pawel to get a 5 minute spot in front of RACK so WG, Sanjeev and his team can let them know why this project is different from 1720
- iv. Proposed RTAR

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- a. How sVOC's emissions change with temperature - Sanjeev*, Jianshun Zhang, Kevin Kwong. RTAR written and revised, in discussion with other groups for co-sponsorship. Should be submitted before the next deadline date
 - b. Work being done on IAQP field studies, Chamber test for reactant type air cleaners & Real Time Small sensors
- h. Standards - Subcommittee Chair -- Paolo Tronville*
- i. We met in our new time slot 2:15 PM, 11 people attended– 1 hour meeting.
 - ii. How do we make ASHRAE Std. 145.2 more acceptable in industry
 - a. Marwa reported that 62.1 is in discussion to add 145.2 in the standard
 - iii. TC2.3, TC2.4 & TC2.9 would like to do a forum in Chicago to see how to address testing combination particle/gas filter systems.
 - iv. GPC 27P "Procedures for measurement of gases in indoor environments" Committee busy responding to comments from American Industrial Hygiene Association IAQ committee
 - v. Standard 145.2 wants to change its scope to include reactive air cleaners. Since it is not clear how to do this an RTAR is being prepared for research to investigate the process.
- i. Website - Subcommittee Chair -- Paula Levasseur*
- Website is up and running and now is hosted at the ASHRAE website. We will try to make the site more users friendly if possible by using tabs etc. Please provide feedback by going to the website so we can make it better.
- j. Matt Middlebrooks reported on SSPC145.*
- Primary goal at this time to expand the scope to include testing of reactive, energetic devices along with what to monitor as byproducts in the standard. There is an RTAR being put together to do a literature search on all the different technologies available in the market which can be included in the standard

4. Report from TC liaisons.

Chris Muller: Working on the IAQ guidelines with the intention of going above the minimum requirement of 62.1 that will include air filtration as required. Also had discussion of test data from 145.2 used in the IAQ procedure. Panel discussion planned for next meeting on nonabsorbent technology which can be included in 145.2 and 62.1.

Chris Muller TC9.9 is working on research project (Jenson group at Syracuse) looking at impact of gases, contaminants on corrosion under various temperature and humidity conditions.

Dean Thompkins TRG4 (IAQP Indoor Air Quality Procedure Development): Voted min list of contaminants which are Formaldehyde and Toluene. Min list will be added by vendor and customer based on use of building and location.

Brad Stanley GPC35 Method of Determining the Energy Consumption Caused by Air-Cleaning and Filtration Devices. GPC committee has produced a working draft which addresses how filter is loaded, what pressure drop to use for energy calculation, what dust to use etc. Currently working on Energy consumption calculation and will later work on gas phase aspect

5. New Business –

Charlene Bayer Inducted as an ASHRAE Fellow

Barney Burroughs: Lot of talk regarding nanoparticles and health effects due to human exposure to it. TC2.3 & TC2.4 should be working together to address this.

6. Agenda suggestions for the Summer Meeting in Long Beach:

None

7. Motion to adjourn @ 2:56 PM 1st Marilyn Listvan, Paula Levasseur 2nd.