

Draft Minutes
TC 2.3 - Gaseous Contaminants/Removal Equipment
Research Subcommittee Meeting
Virtual, Thursday, 7/9/2020 1:00-2:30 pm

1. Meeting call to order – 1:05
2. Introductions and Recording Attendees
 - A. Attendance list: please send chat message
3. Review of Minutes from Orlando
4. Chair comments –
 - A. Virtual meeting
 - B. Please do let us know you are here
 - C. No PMS PI updates, just PMS lead 5-min updates
 - D. COVID and RTARS
 1. Kathleen on task force- collection ideas to push through ASHRAE- if you have ideas related – COVID-19 may influence if there will be funding for research- keeping working on topics
 2. Brian- are we going to consider COVID-19 a particle or gas- it's a particle so potentially
 3. Zied is unhappy that 2.4 is not being included in the Task Force- most of the questions for the task force and filtration is all based on particulate removal (trying to include the experts, making sure they are involved) – Kathleen and Matt, members of 2.4, are on the ETF as well as several from 2.9, but the chair of 2.4 was not contacted.
 - E. Research Breakfast Notes From Virtual meeting Monday July 13th Attended by Paula: We were given a link to watch the Research Chairs power point Presentation
 1. RAC Awards –
 - a. New Investigator Award, delayed
 - b. Homer Addams Award, Recognizes graduate students for outstanding STBE papers
 - c. Service to ASHRAE Research, no applications last year!
 - d. Innovative Research Grant delayed
 - e. Grant in Aid – will be minimized there are usually 20-25 given they are obligated to give 3 unsure how many will be given.
 2. PES and PMS Training is: <https://www.ashrae.org/technical-resources/research> under Training
 - Strongly recommended
 - Will be given with instructor at most needed time of year
 - Available on-line anytime
 - Very good for people who want to understand the job before signing on
 3. Due to decreased funding no URP will be considered.
 4. Funded Publications: Still working on that with the Pubs committee.
 - F. Glossary of ASHRAE Terms – at end of minutes
5. RAC Report (Liaison TC 2.3 – Bill Hutzell)

- A. Funding difficult, probable delays, most critical a year from now, esp. if the AHR doesn't occur.
- B. but continue to submit RTAR/WS
- C. He is available to help
- D. RTAR #1895 was approved by RAC
- E. TC 2.3 is by far the most active, esp within section 2 but perhaps overall
- F. Come to research 'breakfast.' Section 2 meets 10 on Mon July 13th
- G. Next submittal date to RAC is Aug 15. the date it goes to ASHRAE, Paula will have to get it to Liaison, update revisions, then get approved (third week of July ideally)

6. Active Projects

- A. **1720-RP Validation of gas-phase air-cleaner performance test method (Standard 145.2) by laboratory testing of commercially available filtration devices** – PMS: Gemma Kerr, Paula Levasseur, Chris Muller, Nick Agopian, Marilyn Listvan. PI: Kathleen Owen.
 - 1. Update from Gemma- Kathleen has labs setup for testing- COVID-19 stalled the testing, it will happen
 - 2. PMS meeting on July 16, 3-4- going to try and reschedule for 1-2
 - 3. Will need no cost extension (due to COVID, at least in part)

- B. **1579-RP Testing and Evaluation of Ozone Filters for Improving IAQ**— PMS: Sanjeev Hingorani, Kevin Kwong, Matt Middlebrooks, Nick Agopian, Thad Ptak, Hoy Banohan (EHC). PI - Atila Novoselac; Jeff Siegel, Consultant.
 - 1. Sanjeev update- will be presenting on July 15th 3-4 PM
 - 2. Will be applying for a no cost extension- they are doing well
 - 3. Atila Novoselac- 3 slides
 - 4. 12 different filter types, mostly carbon
 - 5. Finished tested at nominal condition in triplicate
 - 6. Test impact of RH% and Temp on 5 filters
 - 7. Requesting extension due to COVID-19
 - 8. Extra- Trying to determine the phenomenon occurring with carbon filters and ozone – fast decay, and then slower decay – looking at the chemistry

- C. **1780-RP, Test Method to Evaluate Cross-contamination of Gaseous Contaminant within Total Energy Recovery Devices**; Responsible Committee: TC 9.10 (Laboratory Systems); Co-Sponsors: TC 2.3. Nick Agopian on PMS. Awarded to University of Saskatchewan.
 - 1. Interrupted by COVID, lit search done(not much out there)
 - 2. Had several meetings, conditions for tests chosen
 - 3. Only concern (Nick)- they are not going to test different static variances
 - 4. What they are interested in is cross contamination- not taking into consideration static pressure differences (adsorption. Desorption)
 - 5. Focusing on wheels, some have a purge and some that don't have purge cycles
 - 6. Just started up, came up with a baseline

- D. **1838-RP Inclusion of Electronic Air Cleaners** PMS: Kevin Kwong. PMS: Jeff Roseberry, Tony Abate, Nick Agopian, Ashish Mathur, Paula Levasseur. PI: Dean Tompkins; co-PI Kathleen Owen. Start Date: Nov 2019.
 - 1. Kevin- 1 hr meeting just prior,
 - 2. Team is making good progress, draft final report
 - 3. Main outcome- 145.2 document heavily red lined- significant revision
 - 4. Had requested a no cost extension through end of August- may need another one

7. Work statements and RTARs – Updates

- A. **1867-RTAR: Development and validation of a model for assessing the corrosion risk of Datacom equipment under different pollution and thermal environmental conditions.** TC 9.9 sponsor. 2.3 co-sponsored. TC 2.3 needs a person on the WS writing group. RTAR was rejected by RAC after 8/15/18.
1. Jensen reported (by email before meeting) that this is not going to be resubmitted. Take off agenda after July 2020.
- B. **1869-RTAR:** Evaluation of Indoor Air Contaminants with respect to Development of a Revised Indoor Air Quality Procedure (IAQP) Design Compound and Design Target Lists for Standard 62.1. Champion: Gemma Kerr. WG: James Dennison, Dean Tompkins, Marwa Zaatari, Hoy Bohanon, Wayne Thomann.
1. Revisions to WS draft are underway. Gemma will follow-up in hopes to get it submitted by August deadline.
 2. Bill reports that it has to be in by Aug 2020, but that might be 2021. Ask on Monday.
- C. **1846-RTAR:** Real Time Small sensors: Brian K., Fuoad Parvin, Thad Ptak, Jeff Roseberry, Sanjeev H., Jensen Zhang, Jordan Clark. No Update – waiting on the 2.4 sensor study
1. Brian – Will check on 2.4 sensor study.
 2. Per Jordan Clark (4.3) on 6/23/20 (email) – 4.3 has an RTAR on sensors that they shared with our WG back in February. No movement on that since.
 3. Need to find out if RTAR overlaps or replaces ours or if both want to move forward.
 4. Brian will work on getting it moving.
- D. **1858-RTAR:** sVOCs including how SVOC emissions change with temperature - Sanjeev*, Jianshun Zhang, Kevin Kwong, Ying Xu, Brent Stephens, Brandon Boor, and Jim Rosenthal.
1. Draft very close to ready for vote.
 2. Sanjeev and Kevin to draft response to Brent’s comments to the draft tomorrow. Hope to get it to vote next week.
- E. **1895-RTAR** Effect of particles on loading on gas filters, with possible interest in looking at other combinations of technologies in the same air cleaner (Matt, Brian, Paula, VJ). TC 2.4 and GPC 35 co-sponsored.
1. Have to address the comments in the WS (supply a letter with the WS)- will have to get approval by 3 different committees and Liaison – aiming for Dec, more reasonable. A meeting is planned for the week of July 20th.

8. Proposed RTARS and other work: status updates - 25 min

- A. Bipolar Ionization/Reactive Air Cleaner performance chamber test method for VOC etc. removal and testing a variety of commercially available ionization devices. Tony Abate champion, Scott Sherwood, Jensen, Dean Tompkins, Charlie Waddell, Chang-Seo, Marilyn Listvan, Ashish. Hold until we hear results of ISO/IEC.
1. (Orlando) No work done. Topic is still of interest.
 2. Virtual – AHAM revising standard. Adding gases. Need to find out what they are doing. Vinoo told us about this
 3. IEC/ISO almost done with chamber specs, then on to particles.
 4. Kathleen- With COVID-19 there is a lot of pressure from ASHRAE to have a test for non- sorbent products (we have been trying to do something for ~8 yrs)
- B. The effects of filtration on health. Dean Tompkins, Nick Agopian, Lexuan Zhong, Caitlin with EHC interest. Keep on the list Nick Agopian.
1. Added Caitlin
 2. Plan to do lit search to see what is known before writing RTAR

- C. Acceptable VOC types and concentrations for inclusion in multi contaminant test gases - on hold. Ashish to champion, Kathleen, Gemma, and Paula. (Orlando) Interest remains.
- D. Venting for 3D Printers: needs champion (Paula, Gemma, Marwa, Dan, Joel Foster (2?.9), Wayne Tomann (EHC), Marilyn, Matthew Stiegel, and Courtney Stanion with Brent talking to 2.4). **needs champion.**
 - 1. (Virtual) Topic is of growing interest.
 - 2. UL already has a standard that talks about the contaminants, what is needed is venting- need someone from a different TC (5.8?)
 - 3. Check on 4.3 people and other committee
 - 4. Gemma and Marilyn to see if they can make this move
- E. Combination duct and chamber test. Jeff Siegal suggested. Matt, Gemma, Christine and Kathleen, Sanjeev, Paula, Atila N, Peter McKinney, KJ, Kevin.
 - 1. Matt will start push to get this started
 - 2. Talk to Bob B?
- II. RTAR on 62.2 unvented combustion devices (Nick brought up). They are writing RTAR on this for huge project (millions). We need to be in it. Needs a chemist.
 - 1. Please volunteer – Nick wants someone to be on PMS – they need us!!!
 - 2. Someone from 189 or 62.1 would be good due to experience when it went through them (Charlie S. will look for names to ask)
 - 3.
- III. Transformation of indoor pollutant due to devices applied for COVID – are newly improved systems (adding UV, other air cleaners, hand sanitizers, ozone, cleansers) changing the IAQ WG: Chang-Seo, Paula, Marilyn
- IV. Gases to dimers, where is the dividing line between particles and gases, nucleation. And how to remove them? Brian’s idea, Gemma, Chang-Seo, Marilyn

9. Adjourn Meeting at 2:22

Attendees List

Kathleen Owen	Francesco Babich	Kyung-Ju Choi
Paula Levasseur	Jeff Roseberry	Jon Rajala
Caitlin Naske	Nick Agopian	Lane Flora
Sanjeev Hingorani	Felipe Soberon	Bill Hutzal ASHRAE RL
Len Duello Leonard	Chang-Seo Lee	Bernard Olson
Victoria Binz	Marilyn Listvan	Atila Novoselac
Henry Greist	Charles Seyffer	Brian Krafthefer
Dan Haas	Mengjia Tang	Gemma Kerr
Matt Middlebrooks	Chrystal Jolliffe	Kevin Kwong
Vinoo Sharma	Ashish Mathur	Peter McKinney
Vivek Gaur	Christine Sun	Himanshu Jasuja

GLOSSARY OF ASHRAE RESEARCH ACRONYMS

GIA	Grant-In-Aid
IRG	Innovative Research Grant
MOP	Manual of Procedures
MORTS	Manager of Research and Technical Services
MTG	Multidisciplinary Task Group
PI	Principal Investigator
PES	Proposal Evaluation Subcommittee
PMS	Project Monitoring Subcommittee
RAC	Research Administration Committee
RFP	Request-For-Proposal
RIP	Research Implementation Plan
RL	Research Liaison
RP	Research Project
RPS	Research Planning Subcommittee
RTAR	Research Topic Acceptance Request
SSPC	Standing Standard Project Committee
TAC	Technical Activities Committee
TC	Technical Committee
TG	Task Group
TRP	Tentative Research Project
URP	Unsolicited Research Proposal
WS	Work Statement