

Draft Minutes
TC 2.3 - Gaseous Contaminants/Removal Equipment
Research Subcommittee Meeting
Long Beach Sunday 5:00-7:00 pm

1. Meeting was called to at 5:07 PM
2. Introductions and Sign-In
3. Review of Minutes from St. Louis – accepted as written.
4. RAC Report (Liaison TC 2.3 – Pawel W) He noted we can get badges. We are looking for the application for the Homer Addams award. \$ 5000 to a student involved in ASHRAE research. Deadline is December 1st.
5. RTAR Practice: Kathleen reviewed how to write and RTAR, by reviewing each section and explaining the type of data that you should include in each of the sections. A brainstorming session was held on writing and RTAR for electronic/reactive room air cleaners. Kathleen encouraged the group to provide their thoughts on each section. The goal was to help those who have never written an RTAR become familiar with the types of information would be helpful.
6. Work statements, RTARs, and RPs – Updates
 - A. **1720-WS Validation of gas-phase air-cleaner performance test method (Standard 145.2) by laboratory testing of commercially available filtration devices – Kartik Potukuchi** 1720 went out for bid this Spring. PES: Paula Levasseur, Chris Muller, Gemma Kerr. This will be voted on in the main meeting on Tuesday.
 - B. **1579-WS Testing and Evaluation of Ozone Filters for Improving IAQ—** Sanjeev Hingorani, Kevin Kwong Matt Middlebrooks Nick Agopian, Thad Ptak are on the PES. 1579-WS made the submission deadline but was returned as being too similar to 1720. This was only extended 1 year. Kathleen will review with Pawel if he does not come to the meeting. We should have gone to RAC on Saturday but we were not advised of the time or place. Pawel will discuss and see if RAC will have time at this meeting on Wednesday. Do not resubmit as you will most likely get the same comments. (from research breakfast: Pawel and Kathleen talked to Mike Vaughn and got us a spot in front of RAC on wed morning. Sanjeev, Keven, Jensen will cover it)
 - C. **1614-WS kitchen hood effectiveness of UV systems (5.10) – B Krafthefer or Marwa Z.** – out for bid again Spring 2017. TC2.3 not listed as cosponsor. We will drop this as we are not involved – Brian should be on, Fuoad Parvin will follow up.
 - D. **1755-TRP, Impact of Gaseous Contamination and High Humidity on the Reliable Operation of Information Technology Equipment in Data Centers”.** TC9.9 project, TC 2.3 co-sponsor, Chris Muller on PES. Project underway Jianshun Zhang – project is going well – equipment is set up – it is a 30 day test. PMS meets tomorrow at 7:30 Am Monday Tichner room at the Renaissance.
 - E. **1780-WS, 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. Chris Muller, Nick and Gemma. This has been submitted to RAC they are awaiting feedback. TC5.5 was removed from the project so all the comments were thrown out. RAC was at the meeting and 5.5 was put back on the project. There are a lot of comments. It is now back on track.
7. Proposed RTARS and other work: status updates

- A. Testing of Electronic Air Cleaners - RTAR from SSPC145, assumed 2.3 co-sponsorship, being rewritten based on Pawel comments. This is being submitted to 2.3 and 62.1 for cosponsorship
- B. sVOCs including how SVOC emissions change with temperature - Sanjeev*, Jianshun Zhang, Kevin Kwong RTAR written and revised, in discussion with other groups for co-sponsorship
- C. Consumer Product used by Occupants, Related Pollution Loads - Chang-Seo Lee*, Thad Ptak, Marilyn Listvan - revisit at a later date.
- D. Bipolar Ionization/Reactive Air Cleaner performance 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. WG plans to work on RTAR for a chamber test. No significant progress. Kathleen will send what we came up with during the brainstorming session earlier in the meeting. She will send to the group.
- E. The effects of filtration on health. Dean Tompkins, Nick Agopian, with EHC interest. Nothing done but there is still interest.
- F. Real Time Small sensors: Brian K., Marilyn Listvan, Fuoad Parvin, Lu Lui, Thad Ptak, Jeff Roseberry, Dave Space, Sanjeev H., Jensen Zhang. RTAR is in process. Pawel has more comments and Brian needs Kathleen to refine her comments. Kathleen to look for most recent revisions. It must be in to RAC by August for October review.
- G. Trace VOC acceptable levels – this will be removed from the list.
- H. Multi-contaminant challenge what acceptable VOC levels-on hold
- I. The role of gas filtration improving IAQ in Residences – Jensen, Nick and Kathleen. Leave idea floating.
- J. Using specially treated textiles to reduce odors (the effect would be similar to using room air-cleaners). Arsen Melikov champion, Ashish, Paula Levasseur.
- K. Demand-based air-cleaner operation to save energy. Brian Krafthefer, Jensen Zhang, Kyle Kisebach. Someone from GPC 35 – Brian will work on this after the RTAR on Sensors.
- L. 3D Printing Topic: needs champion (Paula Levasseur will help someone). UL is working on this they have put together scientific panels. Paula will contact Brent Stevens, Gemma and Marwa, and Dan will work on this.

8. New ideas

- A. Effect of particles on loading on gas filters. with possible interest in looking at other combinations of technologies in the same air cleaner (probably a separate project) 2.4 / 2.3/ 2.9 - Paula to start the conversation between TC chairs. This might be ideal for a virtual TC combined meeting. Matt Brian Paula
- B. New RTAR to review – we are being asked to cosponsor by 62.1 “Outdoor ozone in naturally vented buildings”. Paula will email to Sanjeev to distribute to TC 2.3
- C. Marijuana – effect on air quality in homes cars etc., Kazukiyo Kumagai (noted that marijuana is still illegal US-wide) EHC doing RTAR – Jeff Siegel a good contact
- D. E-cigarette - effect on air quality in homes cars etc., Kazukiyo Kumagai & Shamia Hoque (EHC writing a position paper on this – Larry Shuen?

9. Meeting was adjourned at 6:30

10. Research Chair Breakfast Notes (after the 2.3 Research meeting)

- A. 7 RTARS considered: 1 accepted, 3 accepted with comment, 3 rejected
- B. 11 WS considered, 1 accepted, 7 conditionally accepted, 3 returned
- C. Innovative Research Grant (1) funded (deadline for application is Dec 1)
- D. URPs are possible, new procedures
- E. Grant in Aid - funding for 10-25 grad students per year. Now tied to ASHRAE meeting attendance
- F. Homer Addams award - nominate your grad students who have done ASHRAE work. 1 nominated this year; they won!

- G. PMS Training Module is ready and should be available on-line soon. PMS members should be notified. There is also likely to be a conference call with ASHRAE seeking input on PMS training
- H. PMS: monitor your milestones
- I. RAC is seeking ideas for Technology Transfer - how can our ASHRAE research/knowledge get spread farther/faster/better?
- J. Note that we again have a WS for in Word so we can include tables and graphs. Just remember to keep it short!

Meeting Attendees:

Kathleen Owen	RTI	Matt Middlebrooks	Filtration Group
Gemma Kerr	Retired	Ashish Mathur	UVDI
Marilyn Listvan	Listvan & Associates	Kyung-Ju Choi	Clean & Science
Dan Haas	Clarcor	Jensen Zhang	Syracuse
Fuoad Parvin	Halton	Brian Krafthefer	BCK
Sanjeev Hingorani	Lennon Ind	Paolo Tronville	Politecnico Di Torino
Scott Sherwood	EcoCare Corp	Tony Abate	Atmos Air
Dean Tompkins	Dean Tompkins Group	Mick Flom	3M
Christine Sun	Filtration Tech	Vivekanand Gaur	Columbus Industries
Paula Levasseur	Cameron Great Lakes	Charlene Bayer	Hygieia Sciences
Nick Agopian	RenewAire	Rahul Bharadwaj	AAF Flanders
Kevin Kwong	LMS Technologies	Marwa Zaatari	enVerid Systems
Shamia Hoque	Univ of South Carolina	Chris Muller	Purafil, Inc.
Daniel Mason	Bioclimatic	Chuan He	Delos
Wenhao Chen	California Dept of Public Health	Kazukiyo Kumagai	California Department of Public Health