

DRAFT Minutes
TC 2.3 - Gaseous Contaminants/Removal Equipment
Research Subcommittee Meeting
Sunday, January, 21st 2024, 4:00 PM – 6:PM CT
Marriott Marquis Chicago, Grand Horizon C (4)

Attendees

| | | |
|---------------------|----------------------|----------------|
| Caitlin Naske | Kevin Kwong | Peter McKinney |
| Victoria Binz | Jeffrey L Roseberry | Vivek Gaur |
| Matt Middlebrooks | Christopher Vizcaino | Lubos Forejt |
| Henry Greist | R. Vijay Akumar | Mick Flom |
| Sanjeev Hingorani | Sisssi Liu | Ross Baldinger |
| Gemma Kerr | Chrystal Jolliffe | John Randtke |
| Kyung Ju Choi (K-J) | Mengjia Tang | Masih Alavy |
| Marilyn Listvan | Atila Novoselac | Nick Agopian |
| Scott Sherwood | Andrew Mourgenos | Ashish Mathur |

- 1 Meeting call to order at 4:11
- 2 Introductions and Recording Attendees 5 Min
- 3 Review of Minutes from Summer Meeting: 5 min
- 4 Chair comments
Research Chair Breakfast:
 - Research budge it “back to normal” and there is no longer a queue of projects. All are going out for bid.
 - There will be a budget cost guideline tool coming out soon to help with developing budgets for research projects
 - RAC can now approve up to \$350k
 - Projects will only go out for a re-bid ONCE and then the projects will be dropped
 - Make sure to include cover sheet when responding to RAC comments describing how comments have been address (often there are new members that won’t know what was previously submitted).
 - Encouraged to submit nominations for the research award (no applications submitted recently)
- 5 RAC report (Liaison TC2.3- Chris Gray) 5-10 min (not present, but will check on 1846-RTAR and 1935-RTAR)
- 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. Final report submitted to ASHRAE pending publication. Signed off by TC, in process of writing paper. Project complete.
 - b. ~~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. Nick on PMS. Need updated status. Complete, had surprising results. Report has been published. Project Complete.~~

7 Work statements and RTARs

- 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
Update from Chris Muller?
 - i. Some experimental study of temp and humidity, then did some modeling on copper and silver, RTAR was generated
Need to get update- reach out to Chris Muller?

- b. **1869-TRP:** 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. Project was awarded to Portland State however due to numerous issues negotiations were terminated in September. TC needs to decide to either rebid or give to the next best contractor: We need an update
PES voted to go with the 2nd ranked bidder- will be voted on by TC 2.3 at main meeting & get to Chris Gray before RAC meeting (passed in TC 2.3 main meeting)

- c. **1846-RTAR:** Real Time Small sensors/ affordable: Christopher Vizcaino (will be the new champion), Brian K., Fuoad Parvin, Thad Ptak, Jeff Roseberry, Sanjeev H., Jensen Zhang, Jordan Clark. Members interested Tony Abate, Sanjeev,
 - i. No more work has been done but someone needs to pull a group together, Brian will stay on
 - ii. It does not appear any work was done on this it has been on the list since 2018 – need to either move forward or remove.
 - iii. **Chris Gray – Can we drop this RTAR from the research plan? This one looks like it needs to be dropped and is in danger of being dropped this meeting.**
Reached out and could not find record of RTAR- got particle RTAR will adapt for gas phase
Potentially involve YEA students that worked on IAQ sensors (awards ceremony)
 - iv. Will be starting from scratch- no record of what was started before (will most likely be submitted and get a new RTAR number)
Could have some co-sponsorship with 62.1- interest in that committee on this topic
 - v. Two new members to add to list to work on RTAR- Scott S. and Masih
 - vi. **ASK CHRIS GRAY FOR COPY OF RTAR**

- d. **1858-RTAR:** sVOCs including how SVOC emissions change with temperature - Sanjeev*, Jianshun Zhang, Kevin Kwong, Ying Xu, Brent Stephens, Chang-Seo Lee, Jim Rosenthal, Gabrielle Davis. Work statement was re-written; comments came back and need to be resolved. No work has been done but Sanjeev would like to keep it on/going: Need an update as to whether or not comments were addressed.
Chris Gray – Was the work statement ever submitted? Your agenda says the work statement was re-written, but I believe RAC is still waiting on the WS. This is in danger of being dropped this meeting.
Planning to address comments and resubmit- Emailed group and hopefully by next meeting
Add two additional members: Jeff R and Masih

- e. **1895-WS** 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. (Brian champion- confirm)
WS voted on in 2.3, 2.4 letter ballot was sent out. After this meeting comments were addressed from RAC once GPC 35 votes it will be ready for RAC. RAC apparently lost this – It has been submitted to Chris Gray our new RAC liaison for approval before sending back to RAC with all comments addressed. Paula will advise when hear back from Chris and will resubmit to RAC
Chris Gray – I submitted the updated WS to Donna; thank you for getting that over and addressing all the RAC comments
- f. **1928-WS-** Combination duct and chamber test. Chrystal Jolliffe champion, Gemma, Cheng-Seo, and Joe Pessa. This is sponsored by 2.9, with 2.4 and 2.3 co-sponsors. Work statement submitted for last deadline with minor changes. (From 2.4 Research meeting- 2.9 will be voting on a PI in Chicago meeting)
PES met on Thursday and reviewed the bids and will be reviewing the recommendations in 2.9 meeting and vote in meeting.
- g. **1935-RTAR** Effects of increased use of surface disinfectants and hand sanitizers on indoor air quality. Chang Seo, Kathleen, Jensen, Marilyn, Paula Submitted RTAR, it was received on August 17th. Need status from Chang-Seo it appears work statement and RAC comments are not yet completed for submission.
Last status- Email from Bill saying RTAR approved with conditions, did not receive RAC comments: Have not heard from Chang Seo
Chris Gray –has any work progressed on the work statement? Did you ever get the comments back from RAC?
Never received RAC comments
- h. **1931-RTAR** Determination of the CO₂ and Aerosol Generation and Metabolic Rates of Occupants for Selected Indoor Activities (from TC 2.1) TC 2.3 co-sponsor comments addressed and co-sponsors revoted to be sent to RAC by March 15th deadline
Need and Update
- i. **1913 WS** Study of the Corrosion Impact on Information Technology Equipment in Data Centers Located in Coastal Regions with High Sea Salt Concentration: TC 9.9 is the lead – TC 2.3 is cosponsor. This was submitted to RAC December 15 2023
Chris Muller contact, was approved and is now going out for bid. Chris will be on PMS.

8 Proposed RTARS and other work:

- a. The Effects of Filtration and Air Cleaning on Health & Safety. Caitlin Naske Champion. Nick Agopian, Lexuan Zhong, Kathleen, Sanjeev, Paula, Brent S.
Caitlin- No work has been done since last meeting. Will Email group to address rewrite and submission.
Add Masih to group
- b. Acceptable VOC types and concentrations for inclusion in multi contaminant test gases - **ON HOLD** Ashish to champion, Kathleen, Gemma, and Paula, Chang Seo.
 - i. Goal to modify 145.2 to include a multi gas and what it should be (Ashish). What concentrations can we do (reactions take place) and what mixes work.
 - ii. Ashish will do an initial review of literature to see what is currently available Still interested in this

- c. Venting for 3D Printers: We should consider a program and remove from RTAR list in committee agrees. [Bring it up TC 2.3 programs](#)
- d. Brian- adsorption and emission of particulates in filters, Brian had done a lit search long ago with only a few, may be newer studies/ research. Caitlin willing to champion after getting the health and filtration RTAR finished. [Need an update.](#)
- e. Potential ideas may come out 1579-RP UT is interested but have yet to put anything together.
 - i. Mengjia reported out (in Toronto)
 - 1. One idea, study the lifetime of ozone removal devices in buildings.
 - a. Humidity is not very significant, but flow rate is
 - b. Particle and gas loading on the devices
 - ii. Matt Middlebrooks is willing to help with the VOC and particle loaded concept
[Have a draft put together- will Email title for draft](#)
- f. “Impact of Age on Air Cleaning Devices” Cleaning secondary products from the air- John Randtke, Marwa, Jianshun, Brian K, and Jeff Roseberry interested in helping **ON HOLD for 185.5 will need a test method**
- g. New Ideas
 - i. Chris V. - PFAS is it a particle or a gas, is carbon effective in removing it in air, technology is already used in water, used in a lot of pan and cookware emerging contaminant, will give a presentation on some of the information he has on the topic
Matt M has a paper and Chris V has a presentation
 - ~~ii. Affordable sensors right now the reliable technologies are very expensive~~
 - iii. Brian - What percentage of residential building use gas phase <1%, being talked about in 62.2, Residential air cleaners on our radar (AHAM AC4 – portable unit)
 - iv. What’s better in room air cleaners or in system filters? Literature search into what is out there. Where is the best place to put in filtration? Put it out as a forum with TC 2.4 move to Programs.
[62.2 does not allow portable air cleaners, they will be discussing pros and cons. They aren’t part of the building. Understanding the short term/ periodic benefit of these portable air cleaners.](#)
[Is there research/ data on how long portable air cleaners are used vs stop use, replace, etc.](#)