

**Draft Meeting Minutes**  
**TC 2.3 - Gaseous Contaminants/Removal Equipment**  
**Research Subcommittee Meeting**  
**Chicago, IL Sunday 5:00-7:00 pm**

1. Meeting was called to order at 5:05 by Kathleen Owen
2. Introductions and Sign-In were completed – attendees listed below.
3. Review of Minutes from Seattle, the Seattle minutes were Approved unanimously
4. RAC Report (Liaison TC 2.3 - Harvey Sachs)
  - A. Harvey Sachs not present
  - B. Kathleen Owen reported that RTARS under 100k only goes to RAC hopefully making them easier to get approved
5. Up-Dates on Current Research Project
  - A. 1457-RP “By-product Production from Photocatalytic Oxidation Associated with Indoor Air cleaning Devices” PI - Ramsey Kropp – Kathleen Owen got a report in October saying he was working on it. She has not been able to make contact with Ramsey and he does not respond to emails. To the best of our knowledge ASHRAE has held the last 10% fee. Brad Stanley questioned ending the project – Kathleen Owen says she needs to talk to the PMS regarding this. It was suggested that AHSRAE make contact with the University to see if we can finalize this project.
6. Work statements & RTARs - Updates
  - A. 1579-WS Testing and Evaluation of Ozone Filters for Improving IAQ - Bill Lull, Ashish, Brad, and Jeff, Dave Chojnowski, Michael Sexsmith and Sanjeev Hingorani
    - I. Bill Lull reported that the information from 1491 was not sufficient for 1579. He said we need a good survey as to what is available on the market for ozone filters. Bill has requested that everyone send him filter data that has claims on ozone removal by March 15<sup>th</sup>. Filters should fit in the 145.2 test rig. The list will be combined and Bill will sent back out to everyone. Work statement will be rewritten.
  - B. 1720-WS Validation of gas-phase air-cleaner performance test method (Standard 145.2) by laboratory testing of commercially available filtration devices. Gemma Kerr, champion. Writing WG: Dave Ch, Matt Middlebrooks, and Charlene
    - I. Gemma Kerr gave an update on round robin testing with a minimum of 3 labs and 3 different filters. It will be ready for submittal to Harvey Sachs for review very shortly.
  - C. WS1614 – (kitchen hood effectiveness of UV systems ) finalized the work statement – B Kraftheffer reported that corrections must be made based on comments from RAC and then it will go out for bid. B Kraftheffer also offered to be the 2.3 member on the PMS
  - D. WS1755 – Impact of gaseous contamination and high humidity on the reliable operation of information technology equipment in data centers. We are cosponsoring with TC 9.9 and Chris Muller is the TC 2.3 member on the PMS. They have put in milestones for payments – however Gemma Kerr commented that she does not believe that can that be done by AHSRAE as they stated they would only pay quarterly. Need to determine if payments can in fact be attached to milestones.

7. Proposed RTARS and other work: status updates
  - A. Field performance of typical gas-phase air cleaning technologies over service life. Brad Stanley, Jensen Zhang Brad Stanley noted that there was no work done since the last meeting and there really is nothing left to do. Jensen suggested we narrow it down to a single application.
  - B. sVOCs including how SVOC emissions change with temperature - Charlene Bayer, Jensen Zhang and Stephany Mason- nothing was done- Stephany has changed jobs Charlene is too busy. Jensen Zhang & Sanjeev will write RTAR
  - C. Remaining Life Analysis Test Method for Gas-Phase Medias - Matt Middlebrooks, Paula Levasseur, Brad Stanley, and Ashish Mathur. Paula to attend meeting in Orlando will report to the committee – she will talk with others after the meeting to see if it lends any new ideas.
  - D. Determination of the Exhaust air Contaminant Transfer Ratios (ECTR) for selected typical exhaust airborne contaminants while using commercially available air-to-air energy recovery ventilation (ERV) devices or systems in HVAC systems applications (RTAR may be in progress in TC5.5) – This in on hold for Nick Agopian.
  - E. Demand-based air-cleaner operation to save energy. Brian Krafthefer and Jensen Zhang will work on the RTAR;- They are laying out what should be done and doing some modeling. Brian is proposing using a chamber. Brian will have the RTAR written shortly and turned into the RAC. Does not want to commit to Feb 15<sup>th</sup> deadline. Could use help to see what if any data is available. Using sensors to either bypass or use the air cleaner. Also studying sensor capabilities.
  - F. Bio-effluent emission rates to assist IAQP calculations - Chang-Seo Lee has offered to champion an RTAR for a project to measure. The data in the Handbook (HVAC Applications, Ch 46) is old and does not include the effects of perfume and cologne use. We need to ask for TC 2.1 input and get help for Chang-Seo; Chang – Seo has limited data mostly from the 70's. IAQP – use source emissions rates from literature. She needs emission rates on humans. Too difficult to go component by component – need to monitor building types as a whole. . Pawel Wargoclu suggested that there are some European papers on bio effluents. Chang-Seo should contact him to see if she can gather more of the required data.
  - G. The effects of filtration on health (a project from the EHC priority list) - Currently there is little data for particulate filters and none on gaseous. Charlene Bayer
  - H. IAQP field studies - Charlene – champion for reviving old RTAR
  - I. Using specially treated textiles to reduce odors (the effect would be similar to using room air-cleaners). Arsen Melikov champion, Ashish to help with RTAR. They are focused on hospitals for example using ventilated mattresses with activated carbon fibers to significantly reduce pollution. They have used mannequins to simulate the ammonia in urine – and using specialty textiles they have been able to reduce the ventilation rate. Advanced Air Distribution.—Currently Arsen and Ashish with begin first trying to determine a title and scope of the RTAR.
  - J. Bipolar Ionization (process uses needlepoint technology to produce both positive and negative ions) performance test method for VOC removal and testing a variety of commercially-available ionization devices. Charlie Waddell champion, Jensen, Dean Tompkins. Testing method development for energized air cleaners not just one specific technology. Kathleen Owen mentioned that 145.2 may change its scope to include these technologies. Scott Sherwood will Champion the RTAR and Chang-Seo will help.
8. New Ideas for RTARS: It was decided that there were enough RTARS in process to start anything new .
9. New Business: No new business
10. Adjourn: Meeting was adjourned at 6:55 PM
11. Notes from Research Chair Breakfast (takes place after the 2.3 Research meeting)
  - a. Your liaison is your friend
  - b. Grants in aid for grad students- 59 applicants, 21 approved for \$10K

- c. Homer award for outstanding grad student on an ASHRAE RP. They want to see more names submitted for consideration for this award.
- d. 4 RTARs evaluated- 3 conditionally accepted, 1 rejected with comments
- e. 8 WS evaluated – 5 conditionally accepted, 2 returned with comment, 1 rejected with comments
- f. 6 TRPs were approved for bid this spring, 7 will be reviewed Wed
- g. 1 URP under review
- h. Currently 59 active RP @ 11.0 million
- i. 5 projects started since July, 15 approved for bid, none on hold for funding
- j. ASHRAE is encouraging including GO/NO Go milestones in the WS!!!!!!
- k. RAC approval process being streamlined
- l. RTAR #1625 is still an active number, please submit
- m. WS 1614 from 5.10 has no cosponsors listed. The substitute for the res chair did not know we were supposed to be. (I talked to another res chair (2.9?) who was also supposed to be listed, so ball dropped by them)
- n. I talked to Mike Vaughn about 1457-RP. We have a plan to get him to push UW one more time. He's fine with doing this before we vote to terminate.

Attendees:

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Kathleen Owen	RTI	William Lull	Garrison/Lull Inc.
Matt Middlebrook	Filtration Group	Jensen Zhang	Syracuse
Jack Goboers	Philips Lighting	Peter Freeman	Jacobi Carbons
Brian Krafthefer	BCK Consulting	Charlene Bayer	Hygieia Sciences
Steve Zitin	Bioclimatic Air Systems	Brad Stanley	AAF
Bob Sullivan	Bioclimatic Air Systems	Paula Levasseur	CGL
George Yeboah	Kaneka Corp, NY	Kartik Potukuchi	Graver Technologies
Gemma Kerr	Retired	Kyung-Ju Choi	C & S
Ashish Mathur	UVDI	Dan Haas	Clarcor
Jesper Tanggaard	Groutmij Denmark	Mick Flom	3M
Michael Sexsmith	Ahlstrom	Sanjeev K Hingorani	Lennox
Jeff Roseberg	ProMark Associates	Monte Crabtree	Clarcor Air
Marilyn Listvan	Listvan & Assoc.	Keith Chesson	Clarcor Air
Pawel Wargocki	Tech Univ of DK	Arsen Melikov	Tech Univ of DK
Chang-Seo Lee	Concordia Univ.	Scott Sherwood	Eco-care Corp.
Paolo Tronville	Politecnico DiTorino		