

IEEE P2520.2.1
Machine Olfaction Devices and Systems used for General Outdoor Odor
Monitoring
(SEN/SC/TMODS/OOM/2520.2.1)

Working Group Meeting Minutes
13 June 2022 / 10:00 AM – 11:00 AM (EDT)
WG Chair: Ehsan Danesh
WG Secretary: Cynthia Burham

1. Call to Order

The Chair called the meeting to order at (10:03) AM EDT. The Chair also announced that the meeting was being recorded for the purpose of preparing minutes.

2. Roll Call and Disclosure of Affiliation

Affiliation FAQs: <http://standards.ieee.org/faqs/affiliation.html>

The Chair directed participants to a Google Docs link in the Chat window:

https://docs.google.com/spreadsheets/d/1ydvTFKxRSYRpT1CX-22zaNkETV4_aqD2NDVSoxxfk8/edit?usp=sharing

Participants were asked to register for the meeting by placing an X at the intersection between the row including their name and the column including the meeting date. First-time participants and individuals whose information was not already listed within the Google document were instructed to include their name, affiliation and status under the appropriate columns at the bottom of the Google form. The Chair advised participants that member status is contingent upon provision of all required information, any missing information having been highlighted (yellow) in the Google document for participant's convenience. Participants were also asked to include their affiliations in parentheses after their name in the Chat window, if using the chat area. A few minutes were allowed for participants to access and complete the sign-in process. The Secretary added the attendance status of participants who did not complete their attendance status directly.

At least two (2) of the most recent four (4) WG meetings must be attended in order to maintain voting rights.

The participant information from the chat window and from the participant registration document has been merged and may be found in **Attachment A**.

3. Approval of Agenda

The Chair displayed the announced agenda, confirmed with the Secretary that a quorum existed, and proceeded with approval of the June 13th meeting agenda and the minutes for the WG Meeting held on May 9, 2022. Troy Nagle moved to approve the June 13th meeting agenda. Susan Schiffman seconded approval of the June 13th meeting agenda. Susan Schiffman moved for approval of the May 9th meeting minutes. Troy Nagle seconded approval of the May 9th meeting minutes. Both the agenda and minutes were approved without objection to unanimous consent. 15 voting members were required to be in attendance to achieve quorum. There were 15 voting members in attendance when approval was requested. A total of 21 voting members attended the meeting.

4. IEEE Patent & Copyright Policies

a. Call for Patents

<https://development.standards.ieee.org/myproject/Public/mytools/mob/sli/deset.pdf>

Per standard IEEE-SA WG meeting practice, the Chair reviewed the required policy regarding potentially essential patents. No one raised concerns for consideration.

b. Copyright Policy

<https://standards.ieee.org/ipr/copyright-materials.html>

Per standard IEEE-SA WG meeting practice, the Chair reviewed the required policy regarding copyrights. There were no questions or concerns.

5. Technical Presentation(s) and Discussion

Prior to commencing the technical presentation, the Chair emphasized the importance of adherence to the IEEE patent and copyright policies.

Clarifications by the WG's IEEE Liaison are necessary in order to allay concerns raised by prospective collaborators regarding intellectual property (IP) licensing rights which may attach if partnering in projects with the WG. The Chair is also in contact with the IEEE SA Standards Board Patent Committee (PatCom) regarding issue clarification. Contracting concerned companies as suppliers will allow the WG to harness much of their expertise without exposing their IP while

collaborative options capable of addressing participant IP concerns are determined.

After the short discussion, the Chair introduced the presenter for the June 13th 2022 WG Meeting.

a. *Presentation by Scott Gentry*

Scott Gentry is a representative of KIN-TEK Analytical, Inc (<https://kin-tek.com>). KIN-TEK is an internationally recognized provider of devices and instrumentation related to calibration and to development of complex gas mixtures, even at trace concentrations. KIN-TEK is a leader in permeation tube technology. The company's products include disposable and refillable permeation tubes and test instruments within which these tubes may be implemented. Scott Gentry may be contacted at: scott@kin-tek.com Additional information regarding KIN-TEK products and service may also be obtained by contacting Mr. Gentry's associate at: spencer@kin-tek.com

During his discussion, Mr. Gentry described the permeation tubes and test instruments developed by KIN-TEK. In addition to permeation tubes the contents and performance of which are certified, KIN-TEK produces uncertified diffusion tubes and self-fill tubes for materials KIN-TEK does not produce. KIN-TEK will work with customers to produce and certify mixtures, the components of which are stored in independent permeation tubes to prevent reactivity within a shared cylinder. MSDS and PPE suggestions are provided for reactive materials. Mr. Gentry explained the benefits and limitations of the various types of tubes KIN-TEK produces. A description was also provided of the equipment, an example being the Flexstream, produced by KIN-TEK to produce mixtures at desired concentrations using ovens and up to eight individual permeation tubes. Concentrations produced using KIN-TEK instruments may be further reduced and additional compounds introduced to the mixture either independently or using more advanced KIN-TEK instrumentation. Many KIN-TEK instruments provide a zero-functionality mode to establish a zero baseline and provide the capability of changing ratios by replacing independent permeation tubes.

Throughout the discussion, Mr. Gentry displayed examples of KIN-TEK products and their use. Teflon tubing is used within the KIN-TEK instruments to prevent 'sticking' and ensure expected concentrations remain constant throughout.

General pricing was provided for the various types of tubes, instruments, and services KIN-TEK provides. Cost is related to the type of tube requested and the

compound within the tube. For example, the cost for a permeation tube including hydrogen sulfide for use in a mixture representing a swine farm would presently be \$733.00. Permeation tubes including water cost significantly less. A ballpark figure of \$250.00 and up was cited for most disposable permeation tubes. Instrumentation produced by KIN-TEK ranges in price from \$14,000.00 (basic – Ecoflex) to \$23,000.00. All prices cited are in U.S. dollars.

b. General Discussion:

During the Q&A session following the main presentation Mr. Gentry explained how proprietary tools are implemented to certify KIN-TEK products and may be used to produce custom tubes. Certification may be completed in 4 to 6 weeks for most concentrations. Very low concentrations may require a lead time between 16 and 18 weeks for certification. KIN-TEK may have some materials in stock (e.g., hydrogen sulfide); however, tubes are generally made to order. The Chair has received information regarding price quotes which will be provided upon request.

After the Q&A, the Chair discussed a funding opportunity through IEEE for which the WG is applying. More detail is provided under the New Business section, below.

The Chair also mentioned discussions engaged in with companies in the perfume and fragrance industry to produce and analyze odours of interest to the WG. Concerns have been raised regarding preserving IP protection. The WG may engage the companies in question as suppliers in order to allay concerns; however, the issue of IP protection is being investigated in order to determine options for collaboration which might allow companies to directly provide their expertise to the WG.

The Chair indicated that materials relevant to the WG, including presentations, links, and documents may be found at the WG website:

<https://sagroups.ieee.org/2520-2-1/>

The WG deadline of 7/8/2022 for initial standard draft v1.0 approval will not be met and an extension will be requested.

6. Approval of Agenda and Previous Meeting Minutes

The Chair received a motion from Troy Nagle, seconded by Susan Schiffman, to approve the meeting agenda. The motion passed without objection to unanimous consent. Susan Schiffman motioned to approve the meeting minutes from May 9th 2022 which was seconded by Troy Nagle. The motion also passed without objection to unanimous consent. The number of voting members in attendance required for quorum was 15. There were 21 voting members in attendance.

7. Unfinished Business/Action Item Review

There was no unfinished business.

8. New Business

The Chair brought to the WG's attention a funding opportunity provided by IEEE for which the WG is submitting an application. The funds are made available by the Technical Activities Board Committee on Standards (TAB CoS) Standards Association Discretionary Fund; applicants may receive up to \$10,000 U.S. dollars (possibly more if certain conditions are met) over one year in the form of expense reimbursement. Regular progress reports and a final report at project conclusion are required. Additional opportunities to apply for funding exist throughout the year and the funding may be applied for again, if received. The deadline for the present opportunity is June 27, 2022.

The Chair presented the draft of the WG application. If received, the funding may be applied to assist with instrument and compound purchases, supporting personnel, and related expenses.

9. Future Meetings

The next meeting of the WG will take place at 10 AM EDT on July 11, 2022. No WG meeting will be held during the month of August 2022. The WG will convene again at 10 AM EDT on September 12, 2022.

10. Adjourn

The WG Chair asked for a motion to adjourn. The motion to adjourn was made by Cynthia Burham and seconded by Troy Nagle. Without objection to unanimous consent, the Chair adjourned the meeting at 10:59 AM ET.

Attachment A: Meeting Participants (27)

Last Name	First Name	Affiliation
Burham	Cynthia	University of Texas at Austin
Capelli	Laura Maria Teresa	politecnico di milano
Carneiro	Magnovaldo	Self
Chen	Allen C	Self
Covington	James	Professor, School of Engineering, University of Warwick
Danesh	Ehsan	Alphasense Ltd
De Vito	Saverio	ENEA - Agency for New Technology, Energy and Sustainable Economic Environment
Isz	Sandrine	Alpha MOS
Kuna	Kishore	Honeywell Technology Solutions
Li	Hua-Yao	Huazhong University of Science and Technology
Lozano	Jesus	Universidad de Extremadura
Majewski	Leszek	The University of Manchester
Manikandan	M Sabarimalai	Indian Institute of Technology Bhubaneswar
Mulla	Mohammad Yusuf	Research Institutes of Sweden (RISE)
Nagle	Troy	ECE, NC State University
Peaslee	David	SPEC Sensors, LLC
Potyrailo	Radislav	GE Research
Reimringer	Wolfhard	3S - Sensors, Signal Processing, Systems GmbH
ROMAIN	Anne-Claude	University of Liege
Saffell	John	NosmoTech Ltd.
Sagar	A S M Sharifuzzaman	Sejong university, South Korea
Schiffman	Susan	North Carolina State University
Srinkath	Kavirayani	Gayatri Vidya Parishad College of Eng (Autonomous), Visakhapatnam
Staerz	Anna	IMEC Leuven Belgium
Suciu Jr.	George	Beia RO
Suciu Sr.	George	BEIA
Gentry	Scott	KIN-TEK Analytical