ISOEN 2026

THE 21ST INTERNATIONAL SYMPOSIUM ON OLFACTION AND ELECTRONIC NOSE

May 17-20, 2026 Chongqing, China

Conference Program

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WELCOME MESSAGE

Dear ISOEN 2026 Participants,

Welcome to Chongqing, China!

As the General Chairs of ISOEN 2026, it is our great pleasure and honor to welcome you to this vibrant and historic municipality --- Chongqing. This is the first time that the International Symposium on Olfaction and Electronic Nose (ISOEN) is held in China, marking a significant milestone in the history of our symposium. We are thrilled to bring this globally renowned event to China, and to Chongqing.

ISOEN brings together experts from various fields of engineering --- from biomedical to environmental, from materials engineering to artificial intelligence, to discuss and exchange knowledge on how to build the next generation of electronic instruments for machine olfaction and gustation, either by mimicking nature or by introducing novel sensing concepts.

Following previous ISOENs in Montreal (2017), Fukuoka (2019), Aveiro (2022), and Grapevine (2024), ISOEN 2026 is once again co-sponsored by the International Society of Olfaction and Chemical Sensing (ISOCS) and the IEEE Sensors Council. Most of the accepted papers will be published in the conference proceedings via IEEE Xplore, enabling researchers worldwide to access them anytime, anywhere.

We received 173 submissions, which underwent a rigorous double-blind review process. In total, 144 papers were accepted for presentation, including 54 oral papers and 90 posters. The accepted papers came from 27 countries and regions across Asia/Pacific, Europe, North and South America, Africa and the Middle East. In addition, 2 late-news submissions were accepted as posters.

ISOEN 2026 will feature 10 oral sessions (including 2 special sessions) and 2 poster sessions. Topics will cover a wide range of areas: such as odor sampling, novel sensing principles and materials for gases and liquids, electronic noses and tongues, machine learning for chemical sensing, applications, IoT and robotic systems, olfactory and gustatory perception, and bioengineered sensors.

We are honored to host three keynote speeches by:

Prof. James Covington, University of Warwick, UK

Prof. Genki Yoshikawa, University of Tsukuba, Japan

Prof. Liujing Zhuang, Zhejiang University, China

In addition, there will be 2 special sessions dedicated to cutting-edge topics such as Biomimetic Olfactory Perception and Intelligent Electronic Noses, Heterogeneous Robotic Systems for Environmental Monitoring.

On May 17, six tutorial lectures will be offered, covering Bioinspired Electronic Nose and Electronic Tongue and Recognition Algorithms, Odour Environmental Monitoring and E-nose Classification: Standards and Laboratory Experimental Procedures, delivered by distinguished experts including Prof. Ping Wang, Dr. Ettore Massera and others.

Notably, the 5th Sniffest (i.e., E-nose Competition for Students) will be held during the conference. This competition has been successfully organized at previous ISOEN symposia, and this year marks its fifth edition. Participating students are required to use their own homemade electronic nose devices to detect traditional Chinese medicine samples, which are uniquely characteristic of Chinese culture. This competition not only showcases the innovation of the younger generation in the field of artificial olfaction but also highlights the fascinating integration of traditional Chinese medicine with modern sensing technology. We warmly welcome all attendees to observe and engage.

A total of five awards will be presented at ISOEN 2026: the Wolfgang Göpel Award, the Industrial Award, the Best Paper Award, the Best Young Professional Poster Award and the Sniffest Awards. These awards recognize outstanding contributions to the field of artificial olfaction and chemical sensing, with a special emphasis on encouraging young researchers and students. The winners will be announced during the conference.

ISOEN 2026 would not have been possible without the continuous support of ISOCS and the IEEE Sensors Council. We would like to especially acknowledge the TPC Chair, Dr. Alisa Rudnitskaya, the Tutorials Chair, Dr. Jordi Fonollosa, the Publicity Chair Prof. Laura Capelli, the treasurer of ISOCS, Dr. Jan Mitrovics, the secretary of ISOCS, Dr. Yanxia Hou, the president of ISOCS, Prof. Anne-Claude and all members of the TPC and local organizing committee, as well as the many volunteers who contributed to the peer-review process. Our sincere thanks also go to the professional conference organizers, Young Education CO LTD. and Eapers LLC, with special thanks to Mr. Tom Wehner and Ms. Peiling Li for their support in the paper submission and publication process.

Last but not least, we extend our heartfelt gratitude to all the speakers, authors, participants, sponsors, patrons, and exhibitors who have contributed to the success of this conference and the published proceedings.

Together, let us enjoy the unique beauty of Chongqing --- a city of mountains and rivers --- and advance the frontiers of olfaction and chemical sensing!

Thank you very much!

Prof. Fengchun Tian, Prof. Lei Zhang

General Chairs, ISOEN 2026

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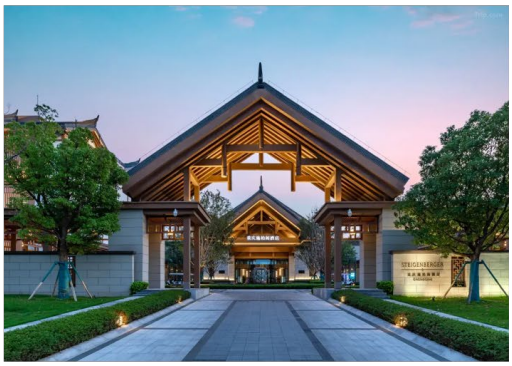
CONFERENCE VENUE

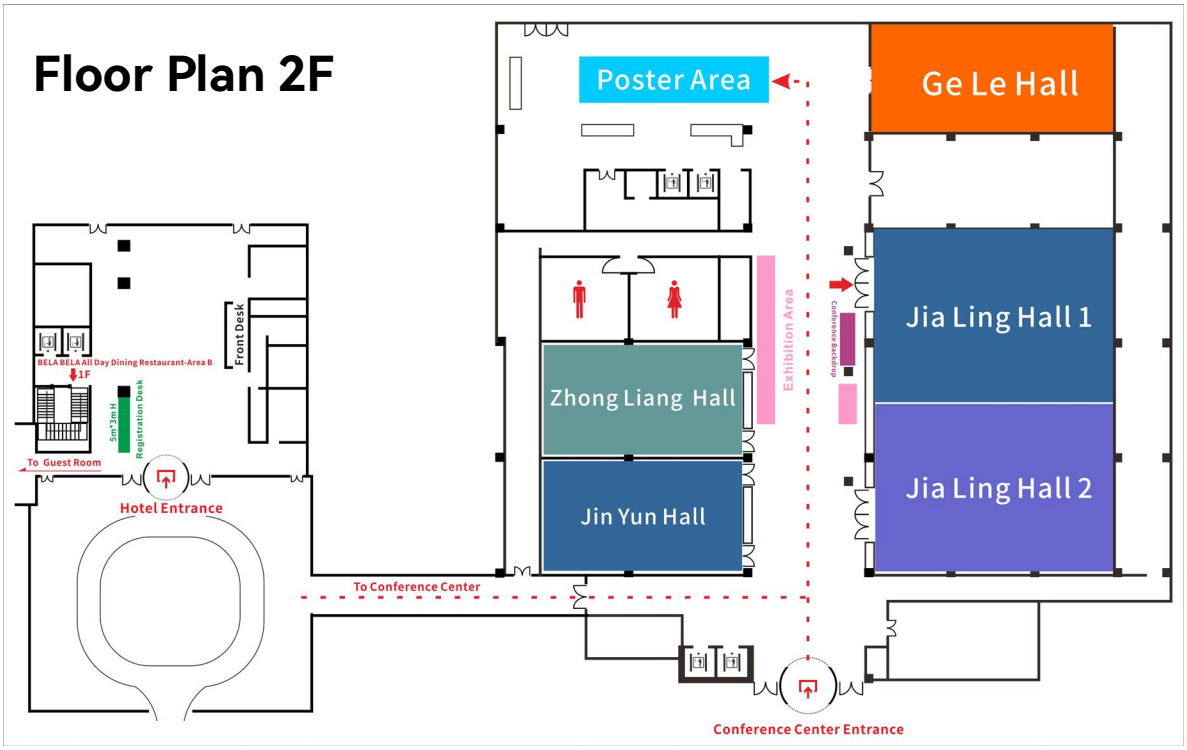


Steigenberger Chongqing

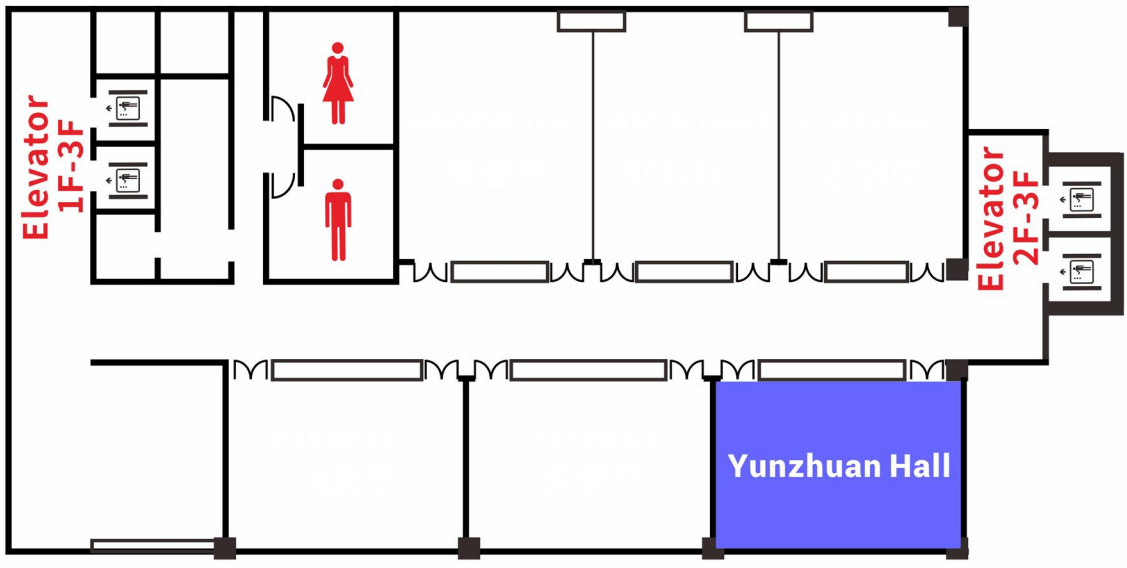
Address: No. 2 Attached, No. 18 Wenguang Avenue, Shapingba District, Chongqing, China

FLOOR PLAN

Floor Plan 2F



Floor Plan 3F



GUIDELINES

- **Oral Presentation**
  1. The duration of a presentation slot is **15** minutes. Please target your lecture for a duration of about 12 minutes for the presentation plus about 3 minutes for questions from the audience.
  2. Your punctual arrival and active involvement in each session will be highly appreciated.
     - Get your presentation PPT or PDF files prepared and backed up.
  3. Laptops, projector & screen, laser sticks will be provided by the conference organizer.

- **Security**

  Please ensure that you take your belongings with you at all time when leaving a room.
  Do not leave bags or laptops unattended.

- **Poster Presentation**

  It's expected that at least one author stands by the poster for (most of the time of) the duration of the poster session. This is essential both to present your work to anyone interest in it and to make sure that your presence is verified by committee.

- **Conference Rooms**

  Jia Ling Hall - Main Conference Room
  Zhong Liang Hall - Tutorial Session & Sniffest Session
  Ge Le Hall - Ge Le Hall is a multi-purpose hall

Ge Le Hall - Opening hours:
From the 18th to the 19th: 09:00 – 18:00
On the 20th: 09:00 – 12:00
It can be used as:
- a lounge / rest area,
- a session / presentation preparation room,
- a prayer room,
- or other similar purposes.

Booking rule:
Participants can freely book time slots for using Ge Le Hall on the whiteboard in front of the hall.
Each booking may not exceed half an hour (30 minutes) per session.
One person may book multiple time slots.

- **Catering for the conference**

May 17, 2026	Lunch	1F	Belabela All Day Dining Restaurant-Area B
	Dinner		
May 18, 2026	Lunch	2F	Belabela All Day Dining Restaurant
	Dinner		
May 19, 2026	Lunch	2F	Belabela All Day Dining Restaurant
	Banquet		Jia Ling Hall
May 20, 2026	Lunch	2F	Belabela All Day Dining Restaurant

AGENDA OVERVIEW

Day 01 May 17, 2026

Time	Activity	Venue
09:00-18:00	**Registration & Conference Materials Collection**	Lobby 1F
09:25-09:30	**Welcome Speech for the Tutorial Session**	Zhong Liang Hall 2F
09:30-10:30	**Tutorial 1** Bioinspired Electronic Nose and Electronic Tongue and Recognition Algorithms	
10:30-10:45	**Coffee Break**	
10:45-11:45	**Tutorial 2** Instrumental Odour Monitoring Systems (IOMS) in Practice: From Experimental Design to Hands-on Exploration of Industrial Field Monitoring Data	
11:45-12:45	**Tutorial 3** Odour Environmental Monitoring and E-nose Classification: Standards and Laboratory Experimental Procedures	
12:45-14:15	**Lunch**	
14:15-15:15	**Tutorial 4** Chemical and Environmental Sensing with Aerial Robots: Concepts, Constraints, and Applications	
15:15-16:15	**Tutorial 5** Aerial Monitoring of Pollution and Odours in Industrial Plants	
16:15-16:30	**Coffee Break**	
16:30-17:30	**Tutorial 6** Electrochemical Biosensor Fundamentals for Artificial Olfaction and Taste Applications	
18:00-20:00	**Welcome Reception**	Belabela All Day Dining Restaurant-Area B, Steigenberger 1F
19:00-21:00	**Young Professional (YP) Poster Session**	Jin Yun Hall 2F

Day 02 May 18, 2026

Time	Activity	Venue
08:30-18:00	**Registration & Conference Materials Collection**	Lobby 1F
08:45-09:05	**Opening Ceremony**	Jia Ling Hall 2F
09:05-09:25	**Group Photo**	
09:25-10:25	**Keynote Lecture #1 - James Covington** Professor, University of Warwick **Speech Title**: Building Trust in Machine Olfaction: Benchmarking Electronic Noses for Real-World Deployment	
10:25-10:35	Coffee Break	
10:35-12:20	**Technical Session 01** Electronic Noses & Intelligent Systems	
12:20-13:50	Lunch	Belabela All Day Dining Restaurant 1F
13:50-15:05	**Technical Session 02** Signal Processing, Machine Learning, Chemometrics, Bioinspired Algorithms I	Jia Ling Hall 2F
15:05-15:20	Coffee Break	
15:20-16:35	**Poster Session I**	Outside Ge Le Hall
16:35-17:50	**Special Session I** Biomimetic Olfactory Perception and Intelligent Electronic Noses	Jia Ling Hall 2F
17:50-18:50	**ISOCS General Assembly**	
18:50-20:35	Dinner	Belabela All Day Dining Restaurant 1F

Day 03 May 19, 2026

Time	Activity	Venue
08:30-18:00	**Registration & Conference Materials Collection**	Lobby 1F
09:00-10:00	**Keynote Speech #2 - Genki Yoshikawa** Group Leader (NIMS); Professor, University of Tsukuba; CTO, Qception **Speech Title**: From Promise to Practice: 40+ Years of Electronic Noses and Key Lessons Learned	Jia Ling Hall 2F
10:00-10:15	**Coffee Break**	
10:15-12:00	**Special Session II** Heterogeneous Robotic Systems for Environmental Monitoring	
12:00-13:30	**Lunch**	Belabela All Day Dining Restaurant 1F
13:30-15:00	**Technical Session 03** Electronic Tongues	Jia Ling Hall 2F
15:00-16:00	**Poster Session II**	Outside Ge Le Hall
16:00-16:15	**Coffee Break**	Jia Ling Hall 2F
16:15-17:15	**Technical Session 04** Applications I	
17:15-18:30	**Sniffest**	Zhong Liang Hall 2F
19:00-21:00	**Banquet**	Jia Ling Hall 2F

Day 04 May 20, 2026

Time	Activity	Venue
08:30-18:00	**Registration & Conference Materials Collection**	Lobby 1F
09:00-10:00	**Keynote Speech #3 - Liujing Zhuang** Professor, Zhejiang University **Speech Title**: Brain-Computer Interface-Based in vivo Bioelectronic Nose	Jia Ling Hall 2F
10:00-10:15	**Coffee Break**	
10:15-11:30	**Technical Session 05** Signal Processing, Machine Learning, Chemometrics, Bioinspired Algorithms II	
11:30-12:30	**Technical Session 06** Gas/Odour Sampling	
12:30-13:50	**Lunch**	Belabela All Day Dining Restaurant 1F
13:50-15:05	**Technical Session 07** Chemical Sensors and Biosensors	Jia Ling Hall 2F
15:05-15:20	**Coffee Break**	
15:20-16:50	**Technical Session 08** Applications II	
16:50-17:20	**Closing and Award Ceremony**	

KEYNOTE SPEAKER

James Covington

Professor, University of Warwick

09:25-10:25 May 18, 2026 Jia Ling Hall

Bio.: James Covington is Professor of Electronic Engineering at the School of Engineering, University of Warwick, and is a leading researcher in chemical sensors and artificial olfaction. He is also the current Director of the BioMedical Engineering Institute (BMEI) at Warwick. In 2010, he founded the BioMedical Sensors Lab to translate gas-analysis technologies into practical systems that cover materials, electronics, and application need. Within medicine, his group develops non-invasive diagnostics and point-of-care monitoring, with previous projects in the analysis of human biowaste, using volatile biomarkers for infection, cancer, and gastrointestinal disease.

In addition, a long-running focus of the lab is low-power gas sensing. By combining micro-fabricated transducers with intelligent signal processing, the team has produced sensors that operate on microwatt-to-milliwatt budgets while maintaining sensitivity, selectivity, and stability. These sensors are now commercially commonplace in the field. Beyond healthcare, Professor Covington's research covers agriculture and environmental monitoring, including plant-health diagnostics, post-harvest quality assessment, early detection of spoilage, and air-quality.

Complementary to this work, he has also been developing olfactory displays, devices that deliver precisely controlled scents to augment training, accessibility, and immersive media. This work has led to numerous olfactory based exhibitions.

Professor Covington also contributes to international standards in olfaction and electronic noses, helping define test methods and performance metrics. He was the president of ISOCS during 2019 to 2022. He chairs the IEEE-SA working group in this field to develop baseline standards for artificial olfactory devices.

Speech Title	**Building Trust in Machine Olfaction: Benchmarking Electronic Noses for Real-World Deployment**

Abstract: Electronic noses are now being developed for environmental protection, industrial control, food quality, and medical diagnostics. However, one of the barriers to wider adoption is still limited by one fundamental issue: trust. Across the field, systems are often difficult to compare, validate, and interpret outside the laboratory. This keynote will discuss how standards are now essential if machine olfaction is to progress from small volume research systems to trusted measurement technologies. It will explain how common frameworks for performance testing, reporting, and benchmarking can provide the foundation for reproducibility, confidence, and regulatory acceptance. Using current international standardisation work being undertaken by the IEEE Standards Association and IEEE Sensors Council, in collaboration with ISOCS, the talk will go through the development of our new standard in olfaction. We believe that this can help accelerate innovation and support the community globally in bringing consistency to electronic noses.

KEYNOTE SPEAKER

Genki Yoshikawa

Group Leader (NIMS); Professor, University of Tsukuba; CTO, Qception

09:00-10:00, May 19, 2026 Jia Ling Hall

Bio.: Genki Yoshikawa is the Group Leader of Olfactory Sensors Group at National Institute for Materials Science (NIMS), a Professor at the University of Tsukuba, and the Chief Technical Officer (CTO) of Qception Corporation. He received his B.S. (1999), M.S. (2001), and Ph.D. (2004) in Science from The University of Tokyo. He previously served as an Assistant Professor at Tohoku University (2005–2008), a Visiting Scientist at the University of Basel (2007–2009), an ICYS-MANA Researcher (2009–2011), and an Independent Scientist at NIMS (2011–2016). He has authored over 100 peer-reviewed publications, holds more than 30 domestic and international patents, and has delivered over 200 invited and keynote lectures. He has led more than 10 funding projects, including PRISM and JST-CREST. He has received over 10 awards and has been featured in more than 100 newspapers and TV programs. He is the leading inventor of Membrane-type Surface stress Sensor (MSS), which has been commercialized as an optimized nanomechanical sensor. He led the world's largest industry–academia–government consortium in the field of olfactory sensing (MSS Alliance/Forum/Partnership), involving more than 50 companies, universities, research institutes, and hospitals. His research is dedicated to developing practical olfactory sensing systems through an integrated approach—advancing hardware (sensing elements, receptor materials, system optimization), software (multivariate analysis, machine learning), and basic science (analytical modeling, fluid dynamics, surface science)—toward world peace.

Speech Title **From Promise to Practice: 40+ Years of Electronic Noses and Key Lessons Learned**

Abstract: Electronic noses have been studied for more than four decades across academia and industry worldwide. Yet, real-world deployments remain remarkably few. Why? To explore the challenges of bridging the gap between laboratory success and field implementation, this talk will first revisit the fundamentals—the dilute, complex, and dynamic nature of odors, the sophistication and individual variation of biological olfaction, and the historical evolution of electronic noses. Then, as one case study, our interdisciplinary research and development based on the Membrane-type Surface stress Sensor (MSS) will be presented to illustrate concrete strategies covering sensing platforms and materials, system design, and AI-driven analysis including explainable AI. Together with industry–academia–government collaboration models and entrepreneurial pathways, recent field demonstrations in livestock monitoring and lung cancer breath diagnostics will also be presented. Key lessons will be shared throughout the talk, ultimately aiming towards world peace.

KEYNOTE SPEAKER

Liujing Zhuang

Professor, Zhejiang University

09:00-10:00, May 20, 2026 Jia Ling Hall

Bio.: Dr. Liujing Zhuang is a New Hundred Talents Program Professor, a faculty member, in Biosensor National Special Laboratory, Key Laboratory for Biomedical Engineering of Education Ministry, Department of Biomedical Engineering, Zhejiang University, China. She received the B.S., Ph.D. degrees from Zhejiang University in Biomedical Engineering in 2011, 2017, respectively. She has been awarded a scholarship from the China Scholarship Council to pursue her study as a joint PhD student at Perelman School of Medicine, Department of Neuroscience, University of Pennsylvania from 2015 to 2016. Her current research focuses on: 1) olfactory brain-machine interface; 2) biomimic olfactory biosensors, 3) neural mechanisms underlying olfactory perception.

Speech Title **Brain-Computer Interface-Based in vivo Bioelectronic Nose**

Abstract: Humans perceive the world through five senses, of which olfaction is the oldest evolutionary sense that enables the detection of chemicals in the external environment. Recent progress in bioinspired electronics has boosted the development of artificial sensory systems. Here, we propose a biohybrid olfactory system by integrating living mammals with implantable flexible neural electrodes, to employ the outstanding properties of mammalian olfactory system. The Key Features of this technology include: 1) Real-Time Odor Detection: Integration of living mammals with implantable flexible neural electrodes captures brain signals linked to specific odors with unparalleled accuracy. 2) Advanced Machine Learning Models: Achieves odor classification accuracies of up to 91.2% using state-of-the-art deep learning techniques. 3) Precision Distance Estimation: Incorporates spiking neural networks for odor source localization, delivering average root mean square error values as low as 0.1 meters across diverse conditions. 4) Dynamic Adaptability: Combines biological and AI-driven technologies for robust performance in varied environments.

TUTORIALS

Tutorial 1 Bioinspired Electronic Nose and Electronic Tongue and Recognition Algorithms

➤ **Presenters**

Ping Wang
Zhejiang University

Hao Wan
Zhejiang University

Chunsheng Wu
Xi'an Jiaotong University

Abstract: Olfaction and gustation are of vital importance to all living beings, including humans. They can sense various chemical signals to fulfill multiple purposes such as survival, feeding and reproduction etc. Bioinspired electronic nose and electronic tongue are odor and taste sensors and instruments developed by imitating the olfactory and gustatory systems of living organisms. These instruments can detect chemical and biological signals presented by various odor molecules and taste substances, and convert them into electrical signals, quantitatively displaying the types and concentrations of the substances being tested. Bio-inspired odor and taste sensors have high performance, high sensitivity, rapid response and excellent selectivity in chemical perception and biochemical analysis.

Pattern recognition technology involves the signals detected by olfactory and gustatory sensors, which are identified and classified based on their common characteristics or attributes. Cluster analysis is a branch of pattern recognition, and it is based on dividing a data set into several subgroups, where the objects within each subgroup have a certain degree of similarity, that is, the categories are determined by the proximity or distance of each pattern in the feature space. The rise of artificial neural networks and bioinspired intelligent recognition algorithms (ANN, CNN, DNN and SNN) information processing technology has injected vitality into the development of electronic nose and electronic tongue for detection and evaluation of food, drugs, medicine and health diagnosis.

This Tutorial Lecture will focus on research related to the design, modeling, and application of Bioinspired Electronic Nose and Electronic Tongue and Recognition Algorithms:

1. The Development of Electronic Nose and the Introduction of Bioinspired Electronic Nose;
2. The Introduction of Bioinspired Electronic Nose and Applications in the Detection and Evaluation of Food, Drugs, Medicine and Health Diagnosis;
3. The Development of Electronic tongue and the Introduction of Bioinspired Electronic Tongue;
4. The Introduction of Bioinspired Electronic Tongue and Applications in the Detection and Evaluation of Food, Drugs, Medicine and Health Diagnosis;
5. The Development of Recognition Algorithms and Introduction of PCA, LDA, PLS, ANN, CNN, DNN and SNN Algorithms etc.;
6. The Applications of Intelligent Algorithms in the Bioinspired Electronic Nose and Electronic Tongue

Tutorial 2 Instrumental Odour Monitoring Systems (IOMS) in Practice: From Experimental Design to Hands-on Exploration of Industrial Field Monitoring Data

➤ **Presenter**

Carmen Bax

Politecnico di Milano

Abstract: Instrumental Odour Monitoring Systems (IOMS), commonly referred to as electronic noses, are increasingly adopted for the continuous monitoring of odour emissions in environmental contexts, directly at industrial emission sources, plant fencelines, or sensitive receptors. Their effective application, however, requires the rigorous implementation of standardized experimental procedures to ensure reliability, traceability, and regulatory relevance of the results.

This tutorial lecture provides a comprehensive and practice-oriented overview of the use of IOMS for environmental odour monitoring, combining methodological foundations with hands-on analysis based on field-acquired monitoring data. The lecture is structured to guide participants through the complete workflow of an IOMS application, with a specific focus on best practices at each operational stage.

The first part of the tutorial addresses the design and implementation of a robust training phase, including the identification of relevant odour sources, construction of representative training datasets, and development of qualitative and quantitative models using multivariate and machine-learning techniques. Particular attention is given to the role of emission samples collection, olfactometric characterization and preparation strategies of representative samples to reproduce ambient odour conditions at the monitoring location.

The second part focuses on the installation of IOMS at the monitoring site and the continuous acquisition of environmental data. Key aspects such as representativeness of the monitoring location, temporal resolution of outputs, and management of operational and environmental interferences are discussed.

Finally, the lecture addresses signal processing and interpretation of results, covering odour classification and quantification, performance verification, and critical evaluation of outputs in view of regulatoryn compliance and decision-making. These concepts are consolidated through hands-on exercises based on real IOMS signals acquired at an industrial plant, allowing participants to directly apply the presented methodologies and critically interpret monitoring outcomes.

Tutorial 3 Odour Environmental Monitoring and E-nose Classification: Standards and Laboratory Experimental Procedures

➤ **Presenter**

Ettore Massera
ENEA

Abstract: The monitoring and classification of environmental odours are emerging as essential components of air-quality management and industrial impact assessment. This tutorial provides an integrated overview of scientific odour characterization, controlled laboratory methodologies for testing environmental sensors, and the evolving landscape of international standards for instrumental odour monitoring systems.

The first part introduces the scientific definition of odour through its physico-chemical descriptors and perceptual dimensions. Controlled laboratory equipment—dynamic dilution systems, gas-mixing units, olfactometric tools, and analytical platforms—forms the basis for generating reproducible odour references. Particular attention is given to the use of Gas Chromatography–Ion Mobility Spectrometry (GC-IMS), which enables rapid chemical fingerprinting of odorous mixtures and supports the interpretation of e-nose responses under well-defined exposure conditions.

The tutorial then focuses on calibration and validation procedures carried out in controlled laboratory environments, including concentration-controlled testing, sensor stability, repeatability, and cross-sensitivity assessment. These methods serve as the foundation for future outdoor deployment, where calibration models must cope with environmental variability, long-term drift, and complex interferents.

A distinctive contribution of this tutorial is the discussion of current standardization efforts. The speaker's direct involvement in several technical working groups offers a unique perspective: the revision of the UNI 11761:2023 standard; participation in the IEEE SA P2520.1 project on baseline performance requirements for odour analysis devices—now entering the ballot phase—and the preliminary full laboratory procedure executed on a GC-IMS system to validate the applicability of the draft standard; and active contribution to the CEN Working Group 41, which is approaching the first near-final draft of the European standard for Instrumental Odour Monitoring Systems. These initiatives collectively demonstrate how laboratory methodologies, performance criteria, and harmonized procedures are converging toward robust, comparable, and regulatory-ready odour monitoring tools.

By combining scientific odour characterization, rigorous laboratory practices, and an insider's view of ongoing standardization efforts, this tutorial provides a comprehensive framework for advancing odour sensing technologies from controlled experiments to real-world environmental applications.

Tutorial 4 Chemical and Environmental Sensing with Aerial Robots: Concepts, Constraints, and Applications

➤ **Presenter**

Patrick P. Neumann
Bundesanstalt für Materialforschung und -prüfung

Abstract: Environmental monitoring increasingly requires measurements in hazardous, hard-to-access, or highly dynamic places (e.g., industrial plants, confined spaces, emergency scenarios). Aerial Robot Olfaction (ARO) addresses this gap by combining aerial robots (drones) with chemical sensing and complementary environmental modalities (e.g., airflow, temperature, humidity) to detect, localize, and map gaseous compounds and their sources in real time. The core difficulty is that gas dispersion is turbulent and intermittent, while rotor-induced airflow disturbs the local plume—
meaning that "higher concentration" is often not a reliable or stable indicator on its own. Therefore, successful ARO systems must be designed as an integrated stack, encompassing sensing principles, platform integration, calibration strategies, and data interpretation methods that explicitly account for plume structure rather than assuming smooth gradients.
This tutorial introduces key concepts and terminology progressively, starting from Mobile Robot Olfaction tasks (gas detection, distribution mapping, source localization) and advancing to practical UAV implementation choices. We contrast in-situ sensing (e.g., MOX/IAQ sensors) with remote or open-path approaches, discussing when each is appropriate and their limitations in the presence of rotor-induced mixing. Practical examples are drawn from nanoUAV platforms (e.g., Crazyflie-class systems) and controlled experiments that reveal rotor downwash effects, sensor response characteristics, and mapping strategies. A central element is a guided, intuitive introduction to plume-aware features that exploit the temporal and spatial structure of gas signals, and how such features support gas source localization with multiple aerial platforms, illustrated through simulation and experimental case studies. Selected concepts are illustrated through guided examples and interactive discussion.

Planned topics:

- Motivation and use-cases for environmental sensing with aerial robots
- ARO/MRO basics: tasks, constraints, and terminology
- Gas sensing principles: MOX/IAQ vs open-path/remote sensing trade-offs
- Platform integration: payload, localization, calibration, and rotor–plume interactions
- Gas distribution mapping with nano-UAVs: experimental pitfalls and trajectory implications
- Plume-aware gas source localization concepts and multi-robot strategies

Tutorial 5 Aerial Monitoring of Pollution and Odours in Industrial Plants

➤ **Presenter**

Agustín Gutierrez-Galvez
University of Barcelona

Abstract: Industrial facilities are important sources of environmental pollution and odour emissions that affect the well-being of neighbouring populations. Odour nuisance, beyond chemical toxicity, is a major source of public complaints and regulatory pressure, often generating conflict between industries and neighbours. Conventional monitoring, based on fixed stations and periodic sampling, provides limited spatial resolution and often misses transient releases or complex dispersion patterns. Aerial sensing platforms equipped with custom-made IOMS (Instrumental Odour Monitoring System) offer a perfect alternative to perform fast measurements around facilities and within emission plumes.

This tutorial will present the basic principles and technologies underlying aerial pollution and odour monitoring. It will begin with a structured review of the range of sensing technologies currently employed in drone-based platforms for chemical and environmental monitoring, covering electrochemical, metal-oxide, photoionization, and spectroscopic approaches. The tutorial will discuss how these sensing modalities are integrated addressing payload constraints, power management, communication architectures, and real-time data acquisition. The design of custom-made IOMS for aerial deployment will then be analysed in detail, with attention to sensor selection criteria based on sensitivity, selectivity, and response time. Particular focus will be placed on engineering solutions to counteract rotor downwash effects that can distort sampling, as well as on sensor chamber design to ensure sensor measurements with minimum distortion. Furthermore, methods for odour estimation from chemical sensor arrays will be discussed, emphasizing modelling strategies that link multidimensional sensor responses to odour concentration metrics, particularly European Odour Units, through machine learning approaches. Calibration transfer of measurements between different industrial plants will also be addressed. Participants will gain a good understanding of how aerial artificial olfaction systems can support industrial monitoring.

Tutorial 6 Electrochemical Biosensor Fundamentals for Artificial Olfaction and Taste Applications

➤ **Presenter**

Hadar Ben-Yoav

Ben-Gurion University of the Negev

Abstract: Electrochemical sensor arrays generate rich, multivariate response patterns that require sophisticated computational methods to extract meaningful analytical information. While the electronic nose community has developed extensive pattern recognition expertise for gas-phase sensing, and electronic tongue research has relied heavily on electrochemical transduction, these fields have evolved with remarkably little algorithmic cross-pollination. This creates a critical gap: researchers developing electrochemical sensor arrays often lack systematic knowledge of the recognition algorithms essential for achieving selectivity, maintaining calibration, compensating drift, and detecting biofouling in real-world applications.

This tutorial addresses the computational intelligence layer that transforms raw electrochemical signals into reliable chemical information. We focus on four algorithmic pillars where electrochemical sensor arrays face unique challenges. First, selectivity algorithms—from classical PCA and PLS-DA through modern transformer architectures—that distinguish target analytes from interferents in complex samples. Second, calibration strategies including multivariate methods, standardization techniques, and deep transfer learning that reduce recalibration time when deploying sensors across different units or environments. Third, drift compensation mechanisms spanning explicit correction, drift modeling, and domain adaptation methods. Fourth, biofouling detection and correction algorithms, an emerging frontier where impedance-based monitoring approaches offer practical solutions.

Participants will gain working knowledge of algorithm selection criteria matched to dataset characteristics, implementation strategies using open-source tools, and validation approaches. Case studies from water quality monitoring, food authentication, and biomedical diagnostics demonstrate algorithm performance under realistic conditions. The tutorial includes troubleshooting guidance for common failure modes: overfitting in small datasets, poor generalization across drift conditions, and calibration transfer breakdown. No prior electrochemistry or machine learning expertise is required.

TECHNICAL PROGRAM

Technical Session 01 - Electronic Noses & Intelligent Systems

Chair: Prof. Takamichi Nakamoto, Institute of Science Tokyo

Dr. Taoping Liu, Xidian University

10:35-12:20, May 18, 2026 **Jia Ling Hall**

Time	Paper Detail
10:35-10:50	**5022: Dynamic Feature Decomposition of Multimodal Electronic Nose Signals for Discrimination of Coffee Grinding Level** **Presenter**: Hamed Karami, Institute for Bioengineering of Catalonia Author(s): Hamed Karami, Marek Gancarz, Antonio Pardo, Luis Fernández, Robert Socha, Robert Rusinek, Bohdan Dobrzanski Jr., Santiago Marco
10:50-11:05	**5032: Active Odor Sensing via Soft Actor-Critic Control Trained in an LSTM-Based Virtual Environment** **Presenter**: Ziteng Bao, Institute of Science Tokyo Author(s): Ziteng Bao, Manuel Aleixandre, Shoichi Hasegawa, Takamichi Nakamoto
11:05-11:20	**5072: Adaptive Olfactory Learning in Electronic Noses Using Neuromodulation-Inspired Reinforcement Signals** **Presenter**: Wai Yie Leong, INTI International University Author(s): Wai Yie Leong
11:20-11:35	**5079: Development of a Modular Electronic Nose for Agriculture Ammonia Monitoring** **Presenter**: Anne-Claude ROMAIN, University of Liège Author(s): Mauri ROSIERS, Muhamad B. JALLOH, Justin MARTIN, Claudia FALZONE, Jean-François HENRICHE, Pierre COHEUR, Anne-Claude ROMAIN
11:35-11:50	**5127: Tuning Sensing Behavior Through Structural Modulation: The Case of N-Alkyl Corroles** **Presenter**: Corrado Di Natale, University of Rome Tor Vergata Author(s): Francesco Pizzoli, Gabriele Magna, Sara Nardis, Larisa Lvova, Roberto Paolesse, Corrado Di Natale
11:50-12:05	**5141: Scalable Fabrication of Nucleobase-Functionalized CVD Carbon Nanotube Field-Effect Transistors for Sub-ppb VOC Detection** **Presenter**: Md Masruck Alam, The Chinese University of Hong Kong Author(s): Md Masruck Alam, Honglin Sun, Huang Ting, Junming Wang, Shu Jing, Leonardo Nicholas Adi Wijawa, Raymond Kai-Yu Tong, Zhaoli Gao
12:05-12:20	**5130: Network of Electronic Noses for Early Detection of Forest Fires** **Presenter**: Jesus Lozano, Universidad de Extremadura Author(s): Ángel López, Juan Álvaro Fernández, José Manuel Perea, José Luis Herrero, José Ignacio Suárez, Jesus Lozano

TECHNICAL PROGRAM

Technical Session 02 - Signal Processing, Machine Learning, Chemometrics, Bioinspired Algorithms I

Chair: Dr. Philipp Müller, Tampere University

Prof. Qi Lu

13:50-15:05, May 18, 2026 **Jia Ling Hall**

Time	Paper Detail
13:50-14:05	**5030: Ridge Regression -Based Approach for Humidity Estimation in Differential Mobility Spectrometry** **Presenter**: Anton Rauhameri, Tampere University Author(s): Anton Rauhameri, Mohsen Haajari, Osmo Anttalainen, Antti Vehkaoja, Philipp M üller
14:05-14:20	**5077: From Geometry to Physical Fields: A Surrogate Model for Gas Sensor Electrode Design Based on Machine Learning** **Presenter**: Yue Liu, Chongqing University Author(s): Yue Liu, Fengchun Tian, Yuzhu Nie, Zhiyuan Wu, Hantao Li
14:20-14:35	**5086: Physics-Inspired Dual-Stream Orthogonal Network for MOX Gas Sensor Decoupling** **Presenter**: Jiwei Tan, Wuhan University of Science and Technology Author(s): Jiwei Tan, Lei Cheng, Wenyao Liu
14:35-14:50	**5090: Bioinspired Reinforcement Learning for Gas Source Localization in Turbulent Environments** **Presenter**: Kaijun Lin, The Hong Kong University of Science and Technology Author(s): Kaijun Lin, Zhiyong Fan
14:50-15:05	**5122: A Semi-Automated Feature Engineering and Modeling Pipeline for Robust Urine Headspace Classification Using MOS E-Noses** **Presenter**: Laura Capelli, Politecnico di Milano Author(s): Michela Cassinerio, Beatrice Julia Lotesoriere, Francesco De Fusco, Stefano Robbiani, Fabio Grizzi, Gianluigi Taverna, Raffaele Dellacà, Mattia Vallerio, Laura Capelli

TECHNICAL PROGRAM

Special Session I: Biomimetic Olfactory Perception and Intelligent Electronic Noses

Chairs: Prof. Ping Wang, Zhejiang University

Dr. Shirong Huang, TU Dresden

16:35-17:50, May 18, 2026 **Jia Ling Hall**

Time	Paper Detail
16:35-16:50	**5185 (Invited Talk): Next-Generation Intelligent Gas Sensing: From Advanced Materials to AI-Enabled Gas Identification** **Presenter**: Gianaurelio Cuniberti, TU Dresden Author(s): Gianaurelio Cuniberti, Shirong Huang
16:50-17:05	**5025: Research on Olfactory Receptor-Based Intelligent Odor Perception Technology and Its Applications** **Presenter**: Weihong Liu, Hanwang Technology Co., Ltd Author(s): Jiahui Sun, Yingjian Liu, Weihong Liu
17:05-17:20	**5101: Targeting Ddit3 Restores Neurogenesis and Olfactory Function in a LPS-Induced Organoid Model of Inflammation** **Presenter**: Yiqun Yu, Eye & ENT Hospital, Fudan University Author(s): Yiqun Yu, Jinxia Liu, Jiaming Qi, Weihao Li
17:20-17:35	**5105: Methanol Detection by Machine Learning-Enabled $Ti_3C_2T_x$ MXene Gas Sensor** **Presenter**: Abdallh Ismail Herbawi, TU Dresden Author(s): Abdallh Herbawi, Leif Riemenschneider, Luis-Antonio Panes-Ruiz, Markus Löffler, Bernd Rellinghaus, Shirong Huang, Gianaurelio Cuniberti
17:35-17:50	**5155: Research Progress of Biomimetic Olfaction and Intelligent Electronic Nose Based on Brain-Like Perception** **Presenter**: Ping Wang, Zhejiang University Author(s): Ping Wang, Shimeng Mou, Mengxue Liu, Yingying Xue, Liujing Zhuang

TECHNICAL PROGRAM

Special Session II: Heterogeneous Robotic Systems for Environmental Monitoring

Chair: Dr. Patrick P. Neumann, Bundesanstalt für Materialforschung und -prüfung

10:15-12:00, May 19, 2026 **Jia Ling Hall**

Time	Paper Detail
10:15-10:30	**5016: When Does Modern AI Add Value to Gas Distribution Mapping?** **Presenter**: Nicolas P. Winkler, Bundesanstalt für Materialforschung und -prüfung Author(s): Nicolas P. Winkler, Patrick P. Neumann
10:30-10:45	**5020: Towards Drone-Based Mapping of Volcanic Gases Using Gas Tomography** **Presenter**: Marius Schaab, Technical University of Munich Author(s): Marius Schaab, Niklas Karbach, Antonia Rabe, Thomas Wiedemann, Patrick Hinsen, Dmitriy Shutin, Thorsten Hoffmann, Achim J. Lilienthal
10:45-11:00	**5042: Preliminary Analysis of Electronic Nose Recognition Performance Under Non-Static Conditions** **Presenter**: Qinghao Meng, Tianjin University Author(s): Wenhao Wu, Jigong Li, Huirang Hou, Huihang Ding, Qinghao Meng
11:00-11:15	**5153: CELiS: A Calibration-Efficient Lightweight Surrogate Model for Metal-Oxide Gas Sensors in Open Sampling Systems** **Presenter**: Han Fan, Technical University of Munich Author(s): Han Fan, Kevin Klug, Yuxin Xing, Achim J. Lilienthal
11:15-11:30	**5156: GAT-GaSPE: Inferring Gas Source Proximity in Real-World Non-Dedicated Sampling Processes Using Graph Attention Networks** **Presenter**: Achim J. Lilienthal, Technical University of Munich Author(s): Han Fan, Zhaozhong Wang, Achim J. Lilienthal
11:30-11:45	**5159: Improving Gas Concentration Estimation With Metal Oxide-Based Open Sampling Systems Using a Conditional Diffusion Model** **Presenter**: Han Fan, Technical University of Munich Author(s): Han Fan, Ziyuan Xia, Yuxuan Yang, Achim J. Lilienthal
11:45-12:00	**5177: Evaluation of Robotic Gas-Source Localization in Simulations Under Outdoor Wind Fluctuations** **Presenter**: Hisayoshi Ando, Tokyo University of Agriculture and Technology Author(s): Hisayoshi Ando, Nana Yokoyama, Takumi Haratsu, Motoki Sakaue, Hiroshi Ishida, Haruka Matsukura

TECHNICAL PROGRAM

Technical Session 03 - Electronic Tongues

Chairs: Prof. Liujing Zhuang, Zhejiang University

Dr. Hadar Ben-Yoav, Ben-Gurion University of the Negev

13:30-15:00, May 19, 2026 **Jia Ling Hall**

Time	Paper Detail
13:30-13:45	**5064: Boron-Doped Diamond Electrode as a Virtual Sensor Array for the Fingerprinting of B-Group Vitamin Dietary Supplements** **Presenter**: Aleksandra Tobolska, Warsaw University of Technology Author(s): Aleksandra Kędzierska, Patrycja Ciosek-Skibińska, Aleksandra Tobolska
13:45-14:00	**5065: Electrochemical Profiling of Dried Strawberry Extracts for Differentiation of Technological Processing Conditions** **Presenter**: Aleksandra Tobolska, Warsaw University of Technology Author(s): Aleksandra Tobolska, Aleksandra Kędzierska, Julia Graczykowska, Katarzyna Rybak, Małgorzata Nowacka, Patrycja Ciosek-Skibińska
14:00-14:15	**5087: Nanohole Array–Enhanced LSPR Sensor for Biomarker Screening** **Presenter**: Xinwei Guo, Zhejiang University Author(s): Xinwei Guo, Liubing Kong, Guangqing Ren, Zihan Jin, Hao Wan, Ping Wang
14:15-14:30	**5166: Acrylamide Tracking in Foodstuffs Using a Virtual Sensor Array** **Presenter**: Alisa Rudnitskaya, University of Aveiro Author(s): Pol Martí Caparrós, Claudia Passos, Liliana Vargas Murga, Bruno Melo, Alisa Rudnitskaya
14:30-14:45	**5168: The Challenges in Developing Screening Tools for Genitourinary Cancers Using Potentiometric Electronic Tongues** **Presenter**: Dmitry Kirsanov, ITMO University, St Petersburg Author(s): Dmitry Kirsanov
14:45-15:00	**5067: LUNA Encryption: A Single Fluorophore-Based Optical Sensor Array for Metal Ions Assessment** **Presenter**: Larisa Lvova, University of Rome Tor Vergata Author(s): Eleonora Macedi, Daniele Paderni, Mauro Formica, Luca Giorgi, Vieri Fusi, Corrado Di Natale, Valerio Allegra, Roberto Paolesse, Larisa Lvova

TECHNICAL PROGRAM

Technical Session 04 - Applications I

Chairs: Prof. Chunsheng Wu, Xi'an Jiaotong University

Dr. Francesco Pizzoli, University of Rome Tor Vergata

16:15-17:15, May 19, 2026 **Jia Ling Hall**

Time	Paper Detail
16:15-16:30	**5106: Chemoresponsive Optical Micro- and Nanoparticles for "Smart Tongue" Sensing of B-Vitamin–Based Neuroactive Dietary Supplements** **Presenter**: Malgorzata Wesoly, Warsaw University of Technology Author(s): Julia Czopińska, Natalia Folwarska, Małgorzata Wesoły, Patrycja Ciosek-Skibińska
16:30-16:45	**5074: Electrochemical Sensor Array for Real-Time Neurotransmitter Detection in Neural Interfaces** **Presenter**: Hadar Ben-Yoav, Ben-Gurion University of the Negev Author(s): Noha Shalabny, Anita Kroitor, Michal Hadass, Alexander Snezhko, Hadar Ben-Yoav
16:45-17:00	**5148: Potentiometric Sensor Array for Microcystin Assessment: Water4all MISSION Project** **Presenter**: Francesco Pizzoli, University of Rome Tor Vergata Author(s): Francesco Pizzoli, Saverio Savio, Michela Sodini, Roberta Congestri, Larisa Lvova
17:00-17:15	**5066: A Microfluidic-Microelectrode Integrated System for Dynamic Culture and Real-Time Monitoring of Taste Organoids** **Presenter**: Yuqi Chen, Xi'an Jiaotong University Author(s): Yuqi Chen, Yao Ma, Xinyi Liu, Yating Chen, Liping Du, Chunsheng Wu

TECHNICAL PROGRAM

Technical Session 05 - Signal Processing, Machine Learning, Chemometrics, Bioinspired Algorithms II

Chairs: Prof. Jia Yan, Southwest University

Dr. Carmen Bax, Politecnico di Milano

10:15-11:30, May 20, 2026 **Jia Ling Hall**

Time	Paper Detail
10:15-10:30	**5019: Fast and Highly Sensitive MOS Sensor Operation: Virtual Temperature Cycle** **Presenter**: Dennis Arendes, Saarland University Author(s): Dennis Arendes, Myriel Thinnes, Andreas Schütze, Christian Bur
10:30-10:45	**5054: A Comparison of Deep Learning Drift Compensation Methods for Few-Shot Sensor Drift** **Presenter**: Jiwei Tan, Wuhan University of Science and Technology Author(s): Wenyao Liu, Lei Cheng, Jiwei Tan
10:45-11:00	**5082: Gas Mixture Discrimination With a Single SnO2 Gas Sensor Triggered by Multi-Intensity Pulse Heating Mode** **Presenter**: Wenying Tang, The Hong Kong University of Science and Technology Author(s): Wenying Tang, Zhu'an Wan, Zhiyong Fan
11:00-11:15	**5173: Chromatogram Peak Detection Using a MOS Sensor With MS Validation** **Presenter**: Antonio Rodrigo Murgia, JLM Innovation GmbH Author(s): Antonio Rodrigo Murgia, Oliver Brieger, Christian Bur, Asya Kalinichenko, Jan Mitrovics
11:15-11:30	**5031: Temporal Convolutional Networks Scaling Under Seasonal Drift: A Benchmark for Edge Odour Classification** **Presenter**: Andreas Cardona, Universitat Politècnica de Catalunya Author(s): Andreas Cardona, Christian Ratti, Laura Capelli, Jordi Fonollosa

TECHNICAL PROGRAM

Technical Session 06 - Gas/Odour Sampling

Chairs: Prof. Han Jin, Shanghai Jiao Tong University

Dr. Rawat Jaisutti, Thammasat University

11:30-12:30, May 20, 2026 **Jia Ling Hall**

Time	Paper Detail
11:30-11:45	**5113: Advancing Gas Detection: Achieving Superior Sensitivity and Selectivity With Plasma Ionization Coupled Electrochemical Sensing Technology** **Presenter**: Han Jin, Shanghai Jiao Tong University Author(s): Han Jin
11:45-12:00	**5157: A Sampling Bag-Based Dehumidification System for Electronic Nose Analysis** **Presenter**: Ana Maria Tischer, Politecnico di Milano Author(s): Ana Maria Tischer, Beatrice Julia Lotesoriere, Stefano Robbiani, Emanuele Zanni, Carmen Bax, Raffaele Dellacà, Laura Capelli
12:00-12:15	**5172: Modular Miniaturized GC-MOS Platform: Design, Characterization, and Proof-of-Concept Validation** **Presenter**: Antonio Rodrigo Murgia, JLM Innovation GmbH Author(s): Antonio Rodrigo Murgia, Oliver Brieger, Christian Bur, Asya Kalinichenko, Jan Mitrovics, Maximilian Wiedel
12:15-12:30	**5021: Enhancing Electronic Nose Performance in Clinical Breath Analysis Through Optimized Sampling Design** **Presenter**: Romain Anne-Claude, University of Liège Author(s): J Martin, M Rosiers, C Falzone, MB Jalloh, JF Henriche, AC Romain

TECHNICAL PROGRAM

Technical Session 07 - Chemical Sensors and Biosensors

Chairs: Prof. Hiroshi Ishida, Tokyo University of Agriculture and Technology

Dr. Hantao Li, Chongqing University of Education

13:50-15:05, May 20, 2026 **Jia Ling Hall**

Time	Paper Detail
13:50-14:05	**5053: Ultrasensitive microRNA Sensors by Synergistic Amplification of CRISPR/Cas12a With Rolling Circle** **Presenter**: Zihan Jin, Zhejiang University Author(s): Zihan Jin, Yuxuan Zhu, Deming Jiang, Mengxue Liu, Yong Qiu, Jiahao Hu, Ping Wang, Hao Wan
14:05-14:20	**5114: Pd-Modified NiO/ZnO Gas Sensor for Highly Sensitive and Rapid Detection of CO Gas** **Presenter**: Ruitian Yan, Harbin University of Science and Technology Author(s): Ruitian Yan, Wenjie Zhao, Xiaoyang Duan, Yang Xiao, Taolin Yu, Han Li, Dan Xu
14:20-14:35	**5120: Highly Selective and Sensitive MOF-Integrated Gas Sensor for Formaldehyde Detection** **Presenter**: Zixi Wan, Hong Kong University of Science and Technology Author(s): Zixi Wan, Xiaojiang Liu, Wenhao Ye, Zhiyong Fan
14:35-14:50	**5165: Dry Printing Metal Oxide-Based Nanoporous Layers for Fabrication of a Multi-Array Gas Sensor with up to Quaternary Compositions** **Presenter**: Leandro Sacco, VSParticle Author(s): Leandro Sacco, Larissa Egger, Nigel Rising, Maxim Popov, Christoph Dösinger, Lorenz Romaner, Anton Köck
14:50-15:05	**5170: Inkjet Micro-Printed MEMS-Based Metal Oxide Gas Sensors with High Reproducibility** **Presenter**: Valeriy Krivetskiy, Lomonosov Moscow State University Author(s): Alina Sagitova, Anastasia Nikolaeva, Sergey Polomoshnov, Valeriy Krivetskiy

TECHNICAL PROGRAM

Technical Session 08 - Applications II

Chairs: Dr. Saverio De Vito, ENEA

Dr. Ettore Massera, ENEA

15:20-16:50, May 20, 2026 **Jia Ling Hall**

Time	Paper Detail
15:20-15:35	**5070: First Step Toward Pneumonia Phenotyping by Breath Analysis With Constant and Temperature-Modulated SMOX Sensors** **Presenter**: Ana Maria Tischer, Politecnico di Milano Author(s): Ana Maria Tischer, Felix Schmidt, Carmen Bax, Emanuele Zanni, Simone Vargiu, Luca Novelli, Udo Weimar, Nicolae Barsan, Raffaele Dellacà, Fabiano Di Marco, Laura Capelli
15:35-15:50	**5116: Future of Induced Volatolomics in Cancer Risk Pre-Warning** **Presenter**: Han Jin, Shanghai Jiao Tong University Author(s): Han Jin
15:50-16:05	**5128: Design and Development of an Atomisation-Based Olfactory Display for Multisensory Advertising** **Presenter**: Aarohi Lakhani, University of Warwick Author(s): Aarohi Lakhani, James Covington
16:05-16:20	**5083: Artificial Odor Unit as a Framework for Instrumental Odor Quantification** **Presenter**: Saverio De Vito, ENEA Author(s): Ettore Massera, James Covington, Emanuele Caccavo, Jean-Cristophe Mifsud, Saverio de Vito
16:20-16:35	**5180: Discrimination of Homologous Fruit Odors and Mixture Ratio Prediction for Scent Recreation** **Presenter**: Chih-Hung Lee, Tsinghua University Author(s): Chih-Hung Lee, Yu Zhang, Guoao Yu, Rong Shi, Qi Lu
16:35-16:50	**5098: High-Sensitivity QCM Detection of Nerve Agent Simulants Using Nanocellulose Aerogels Regulated by Schiff Base Crosslinking Ratio** **Presenter**: Weiwei Wu, Xidian University Author(s): Sijia Zhang, Ruizhi Ning, Xuesong Liu, Qingshan Ye, Songzhuo Xie, Xin Hu, Weiwei Wu

POSTER SESSIONS

Poster Session I

15:20-16:35, May 18, 2026 **Poster Area: Outside Ge Le Hall**

Board No.	Paper Detail
1	**5003: Design of an Electronic Nose for Mainstream Cigarette Smoke and Recognition of Aroma Styles** **Presenter**: Yan Shi, Northeast Electric Power University Author(s): Jinxia Liu, Xiandong Yang, Zhe Jin, Feng Li, Jian Wang, Yanwei Wang, Yan Shi, Hong Men
2	**5005: Design of an Electronic Nose Gas Chamber Inspired by Canine Nasal Cavity** **Presenter**: Hantao Li, Chongqing University of Education Author(s): Hantao Li, Yuting Zhang, Shiming Fu, Zhiyuan Wu, Yue Liu, Bingchen Lin
3	**5008: Long-Term Industrial Dust Monitoring With Low-Cost Sensors: A Case Study** **Presenter**: Patrick Neumann, Bundesanstalt für Materialforschung und -prüfung Author(s): Patrick P. Neumann, Nicolas P. Winkler, Matthias Bartholmai, Erik Schaffernicht, Achim J. Lilienthal
4	**5013: Variable Odorants Online Quantification Based on Gas-Phase Odor Biosensor** **Presenter**: Hongchao Deng, Zhejiang Ecological Environment Group Author(s): Hongchao Deng, Haomiao Sun, Dingfeng Zhu, Lin Xu, Zhangyu Chen, Takamichi Nakamoto
5	**5018: Development of Novel Electronic Nose Based on Protein Amyloid Fibrils as Sensing Material** **Presenter**: Majd Khalife, University Grenoble Alpes Author(s): Majd Khalife, Nada Nazzal, Carole Mathevon, Corinne Pinel, Raphael Mathey, Arnaud Buhot, Vincent Forge, Yanxia Hou
6	**5037: Long-Term Continuous Monitoring of Fish Spoilage Using a Compact Electronic Nose** **Presenter**: Francisco Pérez Nevado, University of Extremadura Author(s): Cristina Brugera, Daniel Martin Vertedor, Patricia Arroyo Muñoz, José Ignacio Suárez Marcelo, José Manuel Perea Ortega, Chunyu Tian, Francisco Pérez-Nevado, Jesús Lozano Rogado
7	**5038: Temperature-Modulated Electronic Nose Using Digital MOX Sensors** **Presenter**: Jesus Lozano, Universidad de Extremadura Author(s): Victor Gonzalez, Alejandro Bernal, José Manuel Perea, José Luis Herrero, José Ignacio Suárez, Jesus Lozano

8	**5047: Construction of a Single-Molecule Biomimetic Nanopore Platform for Short-Chain Fatty Acid Detection** **Presenter**: Yao Ma, Xi'an Jiaotong University Author(s): Yao Ma, Minggao Liu, Xinyi Liu, Yating Chen, Liping Du, Chunsheng Wu
9	**5051: CMOS-Compatible Gas Source Distance Estimation System Using FET-Type Gas Sensors** **Presenter**: Gyuweon Jung, Seoul National University Author(s): Wooseong Roh, Hunhee Shin, Jonghyun Ko, Kangwook Choi, Donghee Kim, Minsun Kim, Jongho Lee, Gyuweon Jung
10	**5052: Odor Context Sensing: Dual-Dimension E-Nose Analysis on Odor Substances and Dispersion States** **Presenter**: Gang Yu, Tsinghua University Author(s): Gang Yu, Hongyi Zhao, Jiawei Yang, Keyang Tang, Qi Lu
11	**5060: Food Flavor Reproduction in Mass Spectral Space With Reduced Interference From Odorless Compounds** **Presenter**: Hanqing Zhao, Nakamoto Lab, Institute of Science Tokyo Author(s): Hanqing Zhao, Takamichi Nakamoto
12	**5061: Exhaled Breath Analysis Using Electronic Nose Detects Chronic Obstructive Pulmonary Disease Patients With Bronchodilator Reversibility** **Presenter**: Huayao Li, Huazhong University of Science and Technology Author(s): Kenan Liu, Jiangfeng Kuang, Huayao Li, Huan Liu
13	**5062: Development of an Intelligent Electronic Nose System Based on Multiferroic BiFeO3 Nanomaterials** **Presenter**: Huan Liu, Huazhong University of Science and Technology Author(s): Ziqi Yan, Xinyi Chen, Huayao Li, Huan Liu
14	**5063: Identification of Volatile Organic Compound Biomarkers for Diabetes and Prediabetes Based on Breath Volatolomics Analysis** **Presenter**: Hangming Xiong, Zhejiang University Author(s): Hangming Xiong, Jie Chen, Chicheng Ma, Ping Wang, Yuqun Cai, Hao Wan
15	**5076: Fluorometric Biosensor for Measurement of Acetone in the Gas Phase** **Presenter**: Geng Zhang, Institute of Science Tokyo Author(s): Geng Zhang, Kenta Ichikawa, Kenta Iitani, Yoshikazu Nakajima, Kohji Mitsubayashi
16	**5078: Nanotube Array Gas Sensor With Integrated ZnO Nanosheet Filter for Selective NO2 Detection** **Presenter**: Weiqi Zhang, Hong Kong University of Science and Technology Author(s): Weiqi Zhang, Zhiyong Fan

17	**5089: Application of Electronic-Nose to Monitor the Production and Quality of the Tomato Industry** **Presenter**: Jose Pedro Santos, Institute of Physical Technologies and Information Author(s): Ramiro Sánchez, Félix Meléndez, Víctor Fernández, Nohely Santamaría, Yaiza Belacortú, Juan Álvaro Fernández, José Pedro Santos, Jesús Lozano
18	**5092: UAV-Based Environmental Monitoring: System Design and Environmental Calibration** **Presenter**: Sergej Johann, Bundesanstalt für Materialforschung und -prüfung Author(s): S. Johann, N. P. Winkler, H. Kohlhoff, J. Schlischka, A. Opitz, P. Neumann
19	**5094: Green E-Tongue Sensors Using Biodegradable and Sustainable Materials** **Presenter**: Wai Yie Leong, INTI International University Author(s): Wai Yie Leong
20	**5095: Human-to-Drone Odour Plume Tracking: A First Investigation** **Presenter**: Haruka Matsukura, The University of Electro-Communications Author(s): Haruka Matsukura, Hiroshi Ishida, Anne-Claude Romain
21	**5096: Optimizing UWB Update Frequency for UAV Localization in Hazardous Environment** **Presenter**: Nan Wang, Dalian University of Technology Author(s): Nan Wang, Sohaib, Yitian Ma, Zhao Zhang, Ziyu Qiu, Bo Feng, Lansen Sun, Lingchu Huang, Baoyu Huang, Xiaogan Li
22	**5102: Inkjet-Printed Wearable Gas Sensor Based on Fabric and Ionic Liquid Solidified Electrolyte** **Presenter**: Ping Wang, Zhejiang University Author(s): Yuzi Zeng, Zhuoru Huang, Lingxiang Chen, Ping Wang, Hao Wan
23	**5103: Nanocrystalline Copper Gallate-Based Materials for VOCs Detection at High Air Humidity** **Presenter**: Valeriy Krivetskiy, Lomonosov Moscow State University Author(s): Alina Sagitova, Alexandra Bogdanova, Evgeny Boltkov, Yuriy Grigoriev, Valeriy Krivetskiy
24	**5104: Recognition of Carrots Originated From Different Market Types Based on Their Volatile Profiles** **Presenter**: Malgorzata Wesoly, Warsaw University of Technology Author(s): Zuzanna Mazur, Magdalena Borowska, Wojciech Wróblewski, Małgorzata Wesoły
25	**5107: Gas Sensing Signal Modulation Strategies in Electronic Noses: A Mini-Review** **Presenter**: Abdallh Ismail Herbawi, TU Dresden Author(s): Shirong Huang, Leif Riemenschneider, Gianaurelio Cuniberti

26	**5108: Chiral Enantiomers Recognition by Electronic Nose** **Presenter**: Gianaurelio Cuniberti, TU Dresden Author(s): Shirong Huang, Chenchen Wang, Gianaurelio Cuniberti
27	**5109: 2D MXene/Transition Metal Dichalcogenide Heterostructures-Based Gas Sensors for Ppb-Level Formaldehyde Detection** **Presenter**: Shirong Huang, TU Dresden Author(s): Yutong Wu, Shirong Huang, Bing Wu, Cheng Yin, Zdeněk Sofer, Gianaurelio Cuniberti
28	**5117: Lattice-Mismatched-Assisted MXene Surface Functionalization for Hydrogen Sensing** **Presenter**: Shirong Huang, TU Dresden Author(s): Cheng Yin, Zheng Li, Leif Riemenschneider, Yutong Wu, Shirong Huang, Gianaurelio Cuniberti
29	**5118: Palladium Nanoparticle Functionalized Single Walled Carbon Nanotubes-Based Highly Sensitive Hydrogen Sensor** **Presenter**: Gianaurelio Cuniberti, TU Dresden Author(s): Zheng Li, Yutong Wu, Cheng Yin, Leif Riemenschneider, Luis Antonio Panes-Ruiz, Helin Sun, Muhannad Al Aiti, Shirong Huang, Gianaurelio Cuniberti
30	**5129: Electronic Nose-Based Breath Analysis for Early Non-Invasive Crohn's Disease Diagnosis** **Presenter**: Nezha EL BARI, Moulay Ismail University Author(s): Makhtar War, Benachir Bouchikhi, Naoual Lagdali, Fatima Zohra Ajana, Violeta Simion, Nezha El Bari
31	**5138: Lung Cancer Detection With a Sensor Array of Redundant Organic Chemoresistors and Integrated Metal Oxide Gas Sensor** **Presenter**: Valerio Allegra, University of Rome Tor Vergata Author(s): Alexandro Catini, Massimiliano De Luca, Valerio Allegra, Rosamaria Capuano, Gabriele Magna, Francesca Mastrangeli, Roberto Paolesse, Corrado Di Natale
32	**5139: Measurements of Polycyclic Aromatic Hydrocarbon Vapors Using a Nanomechanical Sensor** **Presenter**: Yohsuke Shiiki, National Institute for Materials Science Author(s): Yohsuke Shiiki, Genki Yoshikawa, Kosuke Minami
33	**5149: A Compact Column-Free Gas Spectrometer: Detecting Breath Fingerprints With Multivariate Analysis** **Presenter**: Matilde Arfilli, University of Bologna Author(s): Matilde Arfilli, Chiara Dell'Atti, Oumaima Afif, Raffaele Correale, Marco Tartagni

34	**5151: An Improved Experimental Setup for Electronic Nose-Based Monitoring of Food Spoilage Under Refrigerated Conditions** **Presenter**: Raffaele Dellacà, Politecnico di Milano Author(s): Zanni Emanuele, Corrà Lucia, Giulio de Stefano, Raffaele Dellacà, Laura Capelli
35	**5160: Development of a Mobile Platform–Based System for Airflow Visualization and Spatiotemporal Feature Analysis** **Presenter**: Lingpu Ge, Kyushu University Author(s): Lingpu Ge, Hiroshi Ishida, Yoichi Tomiura, Koji Nakano, Naoya Tate, Yuji Oki, Fumihiro Sassa, Kenshi Hayashi
36	**5162: Comparison Between Traditional Metal-Oxide Sensor Array and a Single Temperature-Modulated Digital Gas Sensor for Cooking State Prediction** **Presenter**: Eleonora Catullo, Politecnico di Milano Author(s): Eleonora Catullo, Lucia Corrà, Emanuele Zanni, Carmen Bax, Raffaele Dellacà, Laura Capelli
37	**5167: Wireless Hydrogen Sensing Platform Based on Sustainable Graphene-Platinum Nanocomposites and UHF RFID Technology** **Presenter**: Tiziana Polichetti, ENEA Research Center Author(s): Tiziana Polichetti, Ettore Massera, Brigida Alfano, Maria Lucia Miglietta, Roberto Parente, Francesco P. Monaco, Marco Consales, Angela Maria Cusano, Alberto Micco, Giuseppe Quero, Andrea Cusano
38	**5169: Feasibility Study and Comparative Assessment of IOMS for Refinery Odour-Source Identification** **Presenter**: Carmen Bax, Politecnico di Milano Author(s): Lucia Corrà, Eleonora Catullo, Bruno Alejandro Jara Angeles, Emanuele Zanni, Carmen Bax, Raffaele Dellacà, Laura Capelli
39	**5171: Inkjet-Printed AuNP LSPR Sensors for VOC Visualization** **Presenter**: Linghui Ge, Kyushu University Author(s): Linghui Ge, Yao Wang, Cong Wang, Akihiro Yoshifuku, Lingpu Ge, Fumihiro Sassa, Kenshi Hayashi
40	**5175: Data-Driven Studies Towards Pathological Disease Assessment Based on Odour Perception** **Presenter**: Ziyang Chen, The Chinese University of Hong Kong, Shenzhen Author(s): Ziyang Chen, Yuan Gao, David Zhang
41	**5184: Real-Time Dynamic Prediction of Odor Nuisance Dispersion Using a Network of Electronic Noses** **Presenter**: Jean-Christophe Mifsud, Ellona Author(s): Ivan Romanytsia, Jean-Christophe Mifsud

42	**5136: An Electronic Nose Based on MEMS Sensors and a Hybrid Algorithm for Lung Cancer Screening** **Presenter**: Jun Yu, Dalian University of Technology Author(s): Yuquan Liu, Yanxu Zhu, Guohui Wu, Han Zhang, Guanyu Yao, Man Sun, Meixi Lin, Huichao Zhu, Xiaogan Li, Jun Chen, Jun Yu
43	**5142: Robust Hydrogen Concentration Prediction via Exponential Kinetic Feature Extraction and Machine Learning** **Presenter**: Shengwei Chen, Shenyang University of Technology Author(s): Shengwei Chen, Meile Wu, Zhixin Wu, Lin Qi, He Zhang, Xiaoshi Jin
44	**5164: Development of a 3D Configurable MOS Sensor Chamber and Internal Air Slats for an Electronic Nose** **Presenter**: Eduardo Fessel Gioppato, University of São Paulo Author(s): Andy Blanco-Rodriguez, Lean Lopes, Eduardo Fessel Gioppato
45	**5014: Mitigation of Device Heterogeneity in Differential Mobility Spectrometry Measurements** **Presenter**: Philipp Müller, Tampere University Author(s): Philipp Müller, Anton Rauhameri, Osmo Anttalainen, Antti Vehkaoja
46	**5099: A Bio-Inspired Online Memory Coordination Model (OMC) for Electronic Nose** **Presenter**: Jingqi Ma, Harbin Institute of Technology Author(s): Jingqi Ma, Hongshuo Fu, Wenyan Li, Bing Liu

POSTER SESSIONS

Poster Session II

15:00-16:00, May 19, 2026 **Poster Area: Outside Ge Le Hall**

Board No.	Paper Detail
1	**5002: Origin Traceability of Wolfberry Based on the Combination of Feature Fusion Classification Network and Electronic Nose System** **Presenter**: Yan Shi, Northeast Electric Power University Author(s): Xiandong Yang, Xingyu Wen, Yan Shi
2	**5004: Flavor and Fragrance Identification Based on an Electronic Nose and a Dual-Branch Feature Cross Network** **Presenter**: Hong Men, Northeast Electric Power University Author(s): Jinxia Liu, Qilong Yang, Zhe Jin, Feng Li, Yifei Wang, Yanwei Wang, Yan Shi, Hong Men
3	**5007: A Dual Drift Compensation Framework for Electronic Nose** **Presenter**: Hantao Li, Chongqing University of Education Author(s): Hantao Li, Shiming Fu, Yuting Zhang, Zhifang Liang, Jingzhi Luo, Zhiyuan Wu
4	**5010: Dual-Modal Sensory Representation for Cigarette Style Evaluation Based on Electronic Nose and Tongue Fusion** **Presenter**: Hong Men, Northeast Electric Power University Author(s): Jinxia Liu, Jian Wang, Zhe Jin, Feng Li, Yatao Cheng, Yanwei Wang, Yan Shi, Hong Men
5	**5015: From Simulation to Reality: Deep Learning for Gas Source Localization With Nano-Drones** **Presenter**: Nicolas Winkler, Bundesanstalt für Materialforschung und -prüfung Author(s): Nicolas P. Winkler, Bener Özel, Patrick P. Neumann
6	**5017: Model-Based Calibration Transfer for Interpretable Machine Learning in MOS Gas Sensing** **Presenter**: Julian Schauer, ZeMA gGmbH, Deutschland Author(s): Julian Schauer, Jannis Morsch, Dennis Arendes, Christian Bur, Andreas Schütze
7	**5023: GAPT: A Hybrid Spatio-Temporal Framework for Data Fusion and Air Quality Prediction in Large-Scale Distributed Sensor Networks** **Presenter**: Lei Cheng, Wuhan University of Science and Technology Author(s): Wenxing Ge, Lei Cheng
8	**5029: Hardware-Efficient Gradient Boosted Trees With Quantization-Aware Training and Greedy Tree Merging for In-Vehicle Odor Evaluation**

	Presenter: Xiaofang Pan, Shenzhen University Author(s): Jinhong Yang, Xingzuo Song, Yicai Xie, Bo Li, Wenbin Ye, Xiaojin Zhao, Xiaofang Pan
9	**5034: Stage-Adaptive Test-Time Experts for Strict Multi-Target Drift in Electronic Nose Systems** **Presenter**: Jie Sun, Nanjing Xiaozhuang University Author(s): Wenjie Luo, Jie Sun
10	**5035: Temporal–Spatial Modulation Spiking Neural Network for E-Nose Signal Recognition** **Presenter**: Jia Yan, Southwest University Author(s): Han Liu, Yang Sun, Yingbo Zhang, Jia Yan
11	**5036: CycleGAN-Based Domain Smoothing for Stable Adversarial Adaptation (CDS-AA)** **Presenter**: Chung-Yen Lee, Tsing Hua University Author(s): Chung-Yen Lee, Pang-Chun Liu, Shih-Wen Chiu, Kea-Tiong Tang
12	**5040: An Insect Olfactory Circuit–Inspired Neural Network for Sauce Classification** **Presenter**: Xueyi Zhou, Hanyang University Author(s): Xueyi Zhou, Yuchi Sun, Qi Lu, Dong-Kyu Chae
13	**5041: A 0.3 v Subthreshold CMOS Analog Front-End With Polyaniline Ph Sensor for Biomedical Applications** **Presenter**: Kiichi Niitsu, Kyoto University Author(s): Keishi Ogura, Kiichi Niitsu
14	**5043: Microwave E-Tongue for Oleic Acid Quantification** **Presenter**: Javier Alonso-Valdesueiro, Universitat de Barcelona Author(s): J. Alonso-Valdesueiro, L. Fernández Romer, S. Marco Colás
15	**5049: Electronic Nose Sensor Array Optimization via Noise-Injected Gating Networks** **Presenter**: Taoping Liu, Xidian University Author(s): Guancheng Ren, Chen Su, Lu Zhang, Weiwei Wu, Taoping Liu
16	**5055: DWTPE-TCN: A Novel Lightweight Temporal Convolutional Network for E-Nose-Enabled Rapid Authentication of Coptis Chinensis Origin** **Presenter**: Jia Yan, Southwest University Author(s): Haolin Gu, Jia Yan
17	**5056: A Semi-Supervised Data Augmentation Framework for Drone-Based Environmental Odor Monitoring** **Presenter**: Zijian Wang, University of Barcelona Author(s): Zijian Wang, Javier Alonso-Valdesueiro, Agustín Gutiérrez-Gálvez, Santiago Marco

18	**5059: Lightweight MLP Multi-Gas Quantitative Method Based on Logarithmic Space Nonlinear Residual Modeling** **Presenter**: Haixia Mei, Changchun University Author(s): Jingyi Peng, Yonggui Zhang, Haixia Mei
19	**5069: Drift-Aware CORAL-Based Unsupervised Domain Adaptation for Electronic Nose Sensor Drift** **Presenter**: Kea-Tiong Tang, Tsing Hua University Author(s): En-Wei Hsu, Pang-Chun Liu, Shih-Wen Chiu, Kea-Tiong Tang,
20	**5073: Data Processing Approaches to Manage Humidity and Drift When Using an E-Nose for Monitoring Odours From Waste Treatment Plants** **Presenter**: Christian Ratti, Politecnico di Milano Author(s): Christian Ratti, Andreas Cardona, Jordi Fonollosa, Laura Capelli
21	**5075: A Real-Time CFD-Driven Olfactory Interface With Wind Stimulus for Virtual Dynamic Odor Environments** **Presenter**: Shuo Li, East China University of Science and Technology Author(s): Shuo Li, Masafumi Uda, Takamichi Nakamoto
22	**5080: Unsupervised Muti-Stage Multi-Source Domain Adaptation Model for Drift Compensation in Electronic Nose Systems** **Presenter**: Wenwen Zhang, Nanyang Technological University Author(s): Wenwen Zhang, Ding Wang, Lei Wang, Zhiping Lin, Lingling Wang
23	**5085: Meta-Learning on Electronic-Nose Time Series for Long-Term Drift Compensation in Metal Oxide Gas Sensor Arrays** **Presenter**: Ting-Han Shi, Tsing Hua University Author(s): Ting-Han Shi, Kea-Tiong Tang, Shih-Wen Chiu, Pang-Chun Liu
24	**5097: In-Network Continuous Calibration for Scalable Low Cost Air Quality Sensors Deployments: A Federated Learning Approach** **Presenter**: Saverio De Vito, ENEA Author(s): Saverio De Vito, Gabriele Piantadosi, Sofia Dutto, Mohamed Elamin, Ran Liu, Wei Hu, Milos Davidovic, Fengchun Tian, Girolamo Di Francia
25	**5100: A Taste Bud Organoid-Based Biosensor Using 3D Microelectrode Arrays to Assess Taste Response Properties** **Presenter**: Yuqi Chen, Xi'an Jiaotong University Author(s): Shuge Liu, Yuqi Chen, Xinyi Liu, Jingyi Li, Liping Du, Chunsheng Wu
26	**5111: A Gaussian Mixture Baseline Estimator for Gas Sensors Drifting Signal** **Presenter**: Chak Lam Jonathan Chan, Hong Kong University of Science and Technology Author(s): Chak Lam Jonathan Chan, Zhiyong Fan
27	**5115: Dynamic Haptic-Olfactory Integrated Framework to Optimize Therapeutic Outcomes in Virtual Reality**

	Presenter: Myint Zu Than, Sunway University Author(s): Myint Zu Than, Jia Jiet Liew, Kian Meng Yap, Yunli Lee
28	**5121: Deep Learning Enabled Gas Mixture Discrimination Under Real-Time Monitoring** **Presenter**: Li Chen, TU Dresden Author(s): Li Chen, Guangpeng Wang, Leonardo Medrano Sandonas, Helin Sun, Shirong Huang, Gianaurelio Cuniberti
29	**5124: Rapid Classification of Coffee Aromas Using a Temperature-Modulated MOX Sensor Array and Convolutional Neural Networks** **Presenter**: Li Chen, TU Dresden Author(s): Helin Sun, Leif Riemenschneider, Li Chen, Shirong Huang, Gianaurelio Cuniberti
30	**5137: An Event-Driven, Energy-Efficient Gas Sensor Interface Tailored for Spiking Neural Networks** **Presenter**: Yicai Xie, Shenzhen University Author(s): Yicai Xie, Xiaojin Zhao, Xingzuo Song, Jinhong Yang, Jinrui Lou, Xiaofang Pan
31	**5143: Loading-Aware Multiphysics Simulation Workflow for Dual-Port SAW Resonators in Sensor Arrays** **Presenter**: Liujing Zhuang, Zhejiang University Author(s): Hongyang Guo, Xiaojing Zhang, Yanran Xia, Hao Jia, Ping Wang, Liujing Zhuang
32	**5144: Specific Digital Evaluation of Taste Information Based on Organoids** **Presenter**: Jianguo Wu, Zhejiang University Author(s): Jianguo Wu, Yongsheng Li, Wenmiao He, Changming Chen, Xuliang Fu, Ping Wang
33	**5145: Anti-Fouling SPR Biosensor With Rigid DNA Tetrahedron Probes and AuNP Signal Amplification for Sensitive miRNA Detection** **Presenter**: Xinwei Guo, Zhejiang University Author(s): Guangqing Ren, Xinwei Guo, Zihan Jin, Zhuoru Huang, Ping Wang, Hao Wan
34	**5146: A Tongue Epithelium–Based Bioelectronic Tongue for the Digitalization of Sensory Evaluation** **Presenter**: Jianguo Wu, Zhejiang University Author(s): Xuliang Fu, Yongsheng Li, Wenmiao He, Jianguo Wu, Liujing Zhuang, Ping Wang
35	**5150: Investigating the Parameter of Cell Density for the Detection and Quantification Ability of a Cell-Based Odor Biosensor** **Presenter**: Yuji Sukekawa, The University of Tokyo Author(s): Yuji Sukekawa, Sawako Niki, Eri Kuroda, Ryohei Kanzaki, Hidefumi Mitsuno
36	**5154: Transwell-Integrated Microelectrode Array for Spatial Impedance and Nanotoxicity Monitoring of Air–Liquid Interface Cells**

	Presenter: Hao Wan, Zhejiang University Author(s): Shichao Tian, Yuxuan Zhu, Deming Jiang, Mengxue Liu, Yong Qiu, Jiahao Hu, Ping Wang, Hao Wan
37	**5158: Electronic Nose Classification of Local Distilled Liquor Using Wavelet-Extracted Full Sensor Decay-Time Responses** **Presenter**: Rawat Jaisutti, Thammasat University Author(s): Pairote Jaideaw, Tanakorn Osotchan, Rawat Jaisutti
38	**5163: Robust Electroantennography Signal Reconstruction via Template Matching** **Presenter**: Jeongmin LEE, The University of Tokyo Author(s): Jeongmin Lee, Yuji Sukekawa, Haupt Stephan, Tomoki Kazawa, Ryohei Kanzaki, Hidefumi Mitsuno
39	**5176: A Bio-Inspired Olfactory Localization Algorithm Based on Active Sniffing Behavior of Mice** **Presenter**: Yingying Xue, Zhejiang University Author(s): Yingying Xue, Shimeng Mou, Liujing Zhuang, Ping Wang
40	**5178: Gas Source Localization in Outdoor Environment Using Deep Learning and Stationary Sensor Network: Change in the Spacing Between Gas Sensors** **Presenter**: Gaoju Zhao, Tokyo University of Agriculture and Technology Author(s): Gao-Ju Zhao, Haruka Matsukura, Hiroshi Ishida
41	**5183: Fast and Reliable Fluid Reconstruction With Physics Prior-Embedded Neural Network** **Presenter**: Changhao Tian, Southern University of Science and Technology Author(s): Changhao Tian, Hongyuan Di, He Kong
42	**SENSL-26-01--0097: Robust Pseudolabel Subspace Learning for E-Nose Drift Compensation** **Presenter**: Haixia Mei, Changchun University Author(s): Feng-Jie Zou, Jia Yan
43	**SENSL-26-02--0191.R1: Compostable Multi-Sensor System for Agricultural Pollutant Sensing** **Presenter**: Andrew Rollo, University of Glasgow Author(s): Joseph Cameron, Dimitris Paretzoglou, Andrew Rollo, Joao Mendes, Lucas Fugikawa-Santos, Jeff Kettle
44	**SENSL-26-02--0217: Development of a Sensor Array and Data Visualisation Platform to Detect Active Steel Corrosion** **Presenter**: Ines Carotti, University of Warwick Author(s): Ines Carotti, Duncan Billson, David Hutchins, James Covington

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