

デジタルオルファクション国際会議

8th WORLD CONGRESS

DIGITAL OLFACTION SOCIETY

December 5 & 6, 2024
Tokyo, Japan

Agenda



8th Digital Olfaction Society Annual Meeting



December 5-6, 2024 – Tokyo, Japan

AP Tokyo Yaesu Dori – Convention Center
KPP Yaesu Building, Chuo-ku, Kyobashi 1-10-7, 104-0031, Tokyo

Day 1 – December 5, 2024

8h00 **Welcoming of attendees & Material Distribution**

8h55 **Welcome Note**

Session 1: From Olfaction to Digital Olfaction: Where we are Now & Perspectives

Chairs: Marvin Edeas and Jesús Lozano

Presentations Length: 20 minutes + 5 minutes discussion



9h00 **DOS 2024 Introductory Remarks: Digital Olfaction: Big Challenges & Huge Barriers**
Marvin Edeas, Institut Cochin, Université de Paris, France



9h25 **Fifteen Years of Digital Olfaction: From Paris 2010 to Tokyo 2024**
Jesús Lozano Rogado, University of Extremadura, Spain



9h50 **Identifying Chemicals Based on Ion and Differential Mobility Spectrometry Measurements**
Philipp Müller, Tampere University, Finland

10h15 Coffee Break & Network Session

Session 2: Digital Olfaction and Applications

Chair: Santiago Marco

Presentations Length: 20 minutes + 5 minutes discussion



10h45 **Olfactory Diversity: Subtractive Mixing for Versatile Odor Creation**
Haruka Matsukura, University of Electro-Communications, Japan



Hiroshi Ishida, Tokyo University of Agriculture and Technology, Japan



11h10 **Stopping to Smell the Roses: Capturing and Using the Scents of Everyday Life**
Qi Lu, Tsinghua University, China



11h35 A Technological Proof of Concept to Substitute Olfaction in Patients with Olfactory Loss
Moustafa Bensafi, Université Claude Bernard Lyon 1, France



12h00 Creative Collaboration in the Metaverse: The Evolution of Scent Design
Monica Bordegoni, Politecnico di Milano, Italy

12h10 Short Oral Presentations (8 minutes + 2 minutes Q&A)

Expanding Olfactory Spatial Design through Mobile Robotics
Caroline McMillan, University of Hertfordshire, United Kingdom

Quantified Taste Detection Using Taste Organoid Based Electronic Tongue
Jianguo Wu, Binjiang Institute of Zhejiang University, China

12h30 Lunch Break & Network Session

Chair: Haruka Matsukura

Presentations Length: 20 minutes + 5 minutes discussion



13h30 AI-enabled Low Dimensional Materials-based Electronic Olfaction Sensors and Their Applications
Shirong Huang, Technische Universität Dresden, Germany



13h55 Opportunities and Challenges for Drone-Based Odour Monitoring: Development and Maintenance of Calibration Models
Santiago Marco, University of Barcelona and Institute for Bioengineering of Catalonia, Spain



14h20 Gas Source Localization with a Mobile Robot
Javier Gonzalez-Jimenez, University of Malaga, Spain

14h45 Short Oral Presentations (8 minutes + 2 minutes Q&A)

Visualization of Multilayered Smell Structure in Tourism via Mobile Spectroscopy
Yoko Iwasaki, Kyoto-Saga Art College, Japan

OE Organoid-Based Biomimetic Olfactory Sensor for Odor Detection
Nan Jiang, Zhejiang University, China

15h05 Coffee Break & Network Session

Session 3: Digital Olfaction: Current State & Barriers

Chairs: Javier González and Hiroshi Ishida

Presentations Length: 20 minutes + 5 minutes discussion



15h40 **TranScent the Education: Designing VR Meditation through Digital Incense for the Youths**
Meikei Lai, Macao Polytechnic University, China



16h05 **Navigating the Challenges and Potentials of E-Nose in Healthcare and Food Sectors**
Hamed Karami, Institute for Bioengineering of Catalonia, Spain



16h30 **Bionic Olfaction Sensing and Digital Recognition Algorithm**
Ping Wang, Zhejiang University, China



16h55 **Olfactory Interfaces for Smell Testing and Training: Innovations from a Human-Computer Interaction (HCI) Perspective**
Marianna Obrist, University College London, United Kingdom

17h20 **Short Oral Presentations & Other Contributions** (8 minutes + 2 minutes Q&A)

Fast Assessment of Odor Constituents in Wastewater Treatment Plants using Ion Mobility Spectrometry Combined with Blind Source Separation Techniques

Luis Fernandez, University of Barcelona, Spain

Olfactory Receptor-Mediated Wound Healing: Lactobacillus Metabolites Biomimetic Complex Activate Epidermal Regeneration Gene Expression by Targeting Skin Olfactive Receptors

Mitsuko Kojima, Innovation Labo Sciences, Japan

Sandalwood: Olfactory Modulation of Brain Plasticity and Aging Functions

Sheena Irshad, Innovation Labo Sciences, Japan

Odor Pleasantness Recognition based on Molecule Space - Graph Convolutional Network

Hou Hui-Rang, Tianjin University, China

Development of an Electronic Nose-Based Coffee Fermentation Monitoring System

Shih-Wen Chiu, Enosim Bio-tech Co., Taiwan

Digitalized Recording of Olfactory Responses in the Progression of Alzheimer's Diseases

Juchan Ha, Hanyang University, South Korea

The Evolution of the Nasal Turbinals in Laurasiatherians

Kai Ito, The University of Tokyo, Japan

Olfactory-Somatic Interaction Design for Wearable Technologies

Caroline McMillan, University of Hertfordshire, United Kingdom

Application of Digital Olfaction to the Tomato Industry: VeggiE-Nose Project

José Pedro Santos, Institute of Physical Technologies and Information, CSIC, Spain

Electronic Nose Using Biomimetic Spiking Neural Network for Fast Odor Source Estimation

Liuqing Zhuang, Zhejiang University, China

Exploration into the Vibrational Theory of Olfaction by Electron Tunneling Spectroscopy

Chaima Essghaier, Duke University, USA

18h00 End of the first day

19h00 **Speakers Dinner (for ticket holders only)**

Contact us if you wish to register.



8h50 Opening of the second day

Session 4: Digital Olfaction Demonstration Showcase at DOS 2024

Chairs: Jesús Lozano and Simon Niedenthal

General Oral Presentation followed by Live Displaying & Demonstration

9h00 **New AroChemBase Software 2024: The Missing Link between Odor / Aroma and Chemical Analysis**

Fabian Lebeau, Alpha MOS, France

Toshiyuki Yajima, Alpha MOS, Japan

9h45 **Scents and Sonics of the Ocean: Multi Sensorial Traces of Lost and Recovered Memories of Sapelo Island**

Yosh Han, YOSH Olfactory Sense, USA

10h30 Coffee Break & Network Session

11h00 **Transrating Images into Odors**

Tomiharu Nagata, Revorn Co., Japan

11h45 **Miniature Wearables for Digital Olfaction: Smart Necklaces and Smartwatches for Scent Detection**

Jesús Lozano Rogado, University of Extremadura, Spain

José Pedro Santos, Institute of Physical Technologies and Information, CSIC, Spain

12h30 Lunch Break & Network Session

13h30 **Olfactory Test with Sniffing Sticks**

Jesús Lozano Rogado, University of Extremadura, Spain

13h40 **Scout3 Case Study: Nespresso Capsule Similarity Profiling**

Lucas Lopez, UAB Volatile Technologies, Lithuania

14h25 **NeOse™: Handheld e-Nose Device Based on 64 Gas Sensors Array Integrated in Bio-Functionalized Silicon Photonic Chip**

Cyril Herrier, Aryballe, France

15h10 **Olfactory Interaction Toolkit Demo**

Qi Lu, Tsinghua University, China

15h40 Coffee Break & Network Session

Additional Technologies & Demonstrations

16h10 **VR Meditation with Digital Incense for Youth Education**

Meikei Lai, Macao Polytechnic University, China

16h20 **Brain-Computer Interface-Based *in vivo* Bioelectronic Nose**

Liuqing Zhuang, Zhejiang University, China

General Discussion & Conclusion

16h35 **What are the main technological challenges in the digitization, transmission, and accurate restitution of scents?**

- *What obstacles exist in converting scents into digital formats, transmitting them accurately, and ensuring faithful reproduction at the destination?*
- *How can emerging technologies like AI aid in overcoming these challenges?*

Discussion with the participation of Speakers, Scientific Committee Members, and Demonstrators.

Update on DOS Tokyo-Worldwide Challenge: The Updates

We are experiencing delays as the project is proving more complex than anticipated. Additionally, we are seeking funding to support the initiative. Despite these challenges, we remain hopeful to achieve our goal by the end of 2025.

17h00 **Awards of DOS 2024**

17h15 **End of the 8th DOS Annual Meeting 2024**

More information: www.digital-olfaction.com.

Abstract Book containing abstracts of all contributions is available upon request.

