Digital Olfaction Society

Digital Olfaction 2026

AGENDA

Decoding the Invisible

December 9–10, 2026

Tokyo, Japan

Welcome to Digital Olfaction 2026

It is a great pleasure to welcome you to Tokyo for the 9th World Congress on Digital Olfaction, taking place on December 9–10, 2026.

Since our first meeting in Paris in 2010, digital olfaction has evolved from an emerging research field into a multidisciplinary area bringing together biology, chemistry, artificial intelligence, engineering and sensory science. Today, we are beginning to see how these disciplines can converge to develop technologies capable of detecting, interpreting and reproducing odours.

This year's congress marks an important step: moving beyond understanding smell to demonstrating what digital olfaction can actually achieve.

On the first day, leading scientists and innovators will share advances in olfactory biology, intelligent sensing, electronic noses, digital scent delivery and human perception. These developments are opening new research opportunities in healthcare, environmental monitoring, immersive technologies and everyday applications.

On the second day, Digital Olfaction Live will bring research closer to practical experience. Participating teams will introduce their innovations and demonstrate technologies ranging from wearable olfactory displays and virtual reality to wildfire detection systems and interactive digital smellscapes. This format will give participants an opportunity to engage directly with the researchers and explore the potential and limitations of emerging technologies.

Our ambition is not simply to showcase innovation, but to encourage critical scientific discussion. Reliability, reproducibility, standardization and practical usability remain essential challenges if digital olfaction is to progress from promising prototypes towards dependable applications.

Above all, this congress is an opportunity to connect people, exchange ideas and build collaborations that will shape the next generation of digital olfaction technologies.

I warmly thank our speakers, demonstration teams, scientific contributors and participants for being part of this journey.

I look forward to welcoming you in Tokyo.



Prof. Jesús Lozano Rogado
President of the Digital Olfaction Society, University of Extremadura, Spain

Day one - Decoding the Invisible

Wednesday, December 9, 2026

08h00 – 08h55 **Registration and Materials Distribution**

08h55 **Welcome and Introduction**
***Marvin Edeas**, Founder of the Digital Olfaction Society, Université Paris Cité, France*

President Keynote



09h00 **From Chemical Detection To Digital Smell Ecosystems: The New Era Of Digital Olfaction**
***Jesús Lozano Rogado**, President of the Digital Olfaction Society, University of Extremadura, Spain*

Session 1: Intelligent Odour Sensing and AI



09h30 **AI-Powered Gas Sensors for the Next Generation of Digital Olfaction**
***Inkyu Park**, Korea Advanced Institute of Science & Technology (KAIST), Korea*



10h00 **Advanced FAIMS Technologies for Next-Generation Digital Olfaction**
Katsuya Ujimoto, RICOH Company, Japan

10h30 – 11h00 Coffee Break & Poster Session

11h00 Short Oral Presentations - Perception and Odor Quality - 10 minutes each (7 min + 3 min Q&A)

Designing Electronic Noses for Universal Odor Recognition and Contextual Interaction
***Gang Yu**, Tsinghua University, China*

Global and Local Temporal Features for Generalizable Chinese Medicine Herbs Classification
***Xueyi Zhou**, Hanyang University, South Korea*

MIMOSA: A Moisture-Inspired Molecular Sensing Architecture for Enhanced Digital Olfaction
***Lawrence Nsubuga**, University of Southern Denmark, Denmark*

Stability of the Fractal Dimension of Acetone Concentration Contours: Implications for Odor Detection
***Yoshiki Matsuoka**, Sanyo Chemical Industries, Ltd., Japan*

Session 2: Olfactory Biology, Receptors and Human Perception



11h40 **From the Biology of Smell to Digital Olfaction: Understanding the Olfactory Brain**
***Laura López-Mascaraque**, Instituto Cajal – CSIC, Spain*



12h10 **Decoding the Human Brain Response to Odors**
***Masako Okamoto**, The University of Tokyo, Japan*

12h40 Lunch Break & Poster Session

Session 3: Digital Scent Delivery and Immersive Experiences



13h45 **Wearable Olfactory Displays: From Odor Delivery to Interactive Experiences**
***Takamichi Nakamoto**, Institute of Science Tokyo, Japan*



14h15 **Digital Olfactory Displays: Bringing Smell into Human–Machine Interaction**
***Philipp Müller**, Tampere University, Finland*



14h45 **Playing with Smell: Digital Olfaction in Games, Immersion and Training**
***Simon Niedenthal**, Malmö University, Sweden*

15h15 Short Oral Presentations - Perception and Odor Quality - 10 minutes each (7 min + 3 min Q&A)

Synchronized Digital Scent Delivery in VR: A Multichannel Ultrasonic Olfactory Display Evaluated in a Virtual Cafeteria Scenario
***Pedro K. Diniz**, Advanced Knowledge Center for Immersive Technologies – AKCIT, Brazil*

Wearable Electronic Nose Ecosystems for Odour Monitoring: Development of Artificial Olfactory Devices for Anosmia People
***Cristina Brugera**, University of Extremadura, Badajoz, Spain*

Beyond Pleasantness and Intensity: Mapping Odour Quality onto Affective and Somatosensory State
***Hildelith Leyser**, McGill University, Canada*

Decoding the Invisible Architecture of Scent: A Bipartite Network Approach to Human Olfactory Receptor Activation
***Monique Alves Frazon Cantu**, Grupo Boticário, Brazil*

15h55 – 16h40 Coffee Break & Poster Session

Session 4: Environmental Monitoring, Smellscapes and Future Applications

16h40 Short Oral Presentations - 10 minutes each (7 min + 3 min Q&A)C

Comparing Electronic-Nose Monitoring and Gas Chromatography to Assess Hydrochar Stability
***Silvia Román Suero**, University of Extremadura, Spain*

Mapping the Smellscape with Electronic Noses
***David Kadish**, Malmö University, Sweden*

Digital Visualization of Layered Smellscapes for Cultural Heritage Tourism: Smartphone Applications in Japan and Germany
***Yoko Iwasaki**, Kyoto-saga Art College, Japan*

From Space to Self: Personal Olfactory Microenvironments for Psychophysical Well-Being
***Anna Barbara**, Politecnico di Milano, Italy*

Digital Olfaction for Wildfire Prevention and Detection: Decoding Plant Volatiles and Gases via Modular Networks
***Ángel López-Luna**, Universidad de Extremadura, Spain*

Brew_Lab: Triggered Aroma Delivery Lets the Public Smell, Then Taste, Coffee from Climate Futures
***Sarah Ali**, University of the Arts London, United Kingdom*

The Role of Artificial Intelligence in Electronic Noses
***Carlos Sánchez-Vicente**, Institute of Physical and Information Technologies (ITEFI-CSIC), Spain*

OODOR – Baselines and Benchmarks (B&B) for Digital Olfaction
***Mohith Talluri**, Dognosis, India*

18h10 **End of Day 1**

20h00 Speakers' Dinner - Reserved for invited speakers & ticket holders only
Register for dinner

Day two - Digital Olfaction Live: Demonstration & Interaction

Thursday, December 10, 2026

08h30 **Welcoming Attendees and Badge Distribution**

09h00 **Demonstration Day Introduction**

09h10 Demonstrations Planning

Nakamoto Research Team / Zhe Zou - Wearable Olfactory Displays and Interactive VR

Jesús Lozano / Ángel López-Luna - Digital Olfaction for Wildfire Prevention and Early Detection

Yoko Iwasaki - Interactive Digital Smellscape Applications

Philipp Müller - Digital Olfactory Displays

Pedro K. Diniz - Multichannel Scent Delivery in Virtual Reality

Sarah Ali - Brew_Lab: Coffee-Scent Experiences (remote showcase proposed)

ScentRealm / Jim Huang - Digital Scent for Interactive Experiences

Gang Yu - AI-Powered Electronic Nose

David Kadish - Portable Electronic Nose and Smellscape Mapping

Cristina Brugera - Wearable Electronic Nose for Anosmia

Yoshiki Matsuoka - Acetone Concentration Visualization

Xueyi Zhou - Electronic-Nose Herb Classification

Questions and Technical Instructions

10h30 Coffee Break & Networking Session

11h00 – 12h30 **Live Demonstrations – Session I**
From Scientific Concepts to Working Technologies

12h30 Lunch Break & Networking Session

13h30 – 15h30 **Live Demonstrations – Session I I**
Hands-On Experiences and Technology Exchange

15h30 Coffee Break & Networking Session

16h00 – 16h45 **Strategic Roundtable: *What Actually Works in Digital Olfaction Today?***

16h45 – 17h15 **DOS Innovation & Demonstration Awards 2026**

17h15 – 17h30 **Closing Remarks and Future Roadmap**

17h30 – 18h00 **Networking, Drinks and Appetizers**