7ᵗʰ WORLD CONGRESS OF

DIGITAL OLFACTION SOCIETY

TOKYO, JAPAN & ONLINE

NOVEMBER 29 & 30 2022

Welcome to the 7th Digital Olfaction Society Annual Meeting

Dear Colleagues,

After the success of the four **DOS World Congresses** (Berlin, 2013 and Tokyo, 2014-2016-2018) and the two congresses on Olfaction & Issues (Paris, 2010 and Milano, 2016), the scientific committee is pleased to announce the 7th Digital Olfaction Society Annual Meeting which will be held on November 29-30, 2022, as a hybrid meeting: in Tokyo, Japan, & Online.

Our aim is to accelerate the digital olfaction innovations in many fields. We will link and connect all actors in this particular field to achieve our goals which is the smell of digital.

The aim of the 7th Digital Olfaction Society World Congress 2022 is to discuss:

- The advances of digital olfaction Research & Development
- The practical applications of digital olfaction
- The impact of these applications on our life and lifestyle

Digital Olfaction Society World Congress 2022 will highlight:

- The interdisciplinary sciences related to Olfaction and Digital Olfaction.
- The way in which we can transfer the concrete breakthroughs of Research & Development towards industrial applications concerned by digital olfaction
- How to design and extend the applications of digital smell technologies to everyday life
- The impact of Digital Olfaction on COVID-19 diagnosis and treatment.

Topics of interest include but are not limited to: Scientific Advances & Perspectives of the Sense of Smell, Scents, Odors and Aromas, Health and Scents, Chemical Sensors and Digital Olfaction devices (Electronic Noses and Chemical Analysis), Scent Generation and Olfactory Displays, Data Analysis and Signal Processing and Industrial and Medical Applications.

The goal of this congress is to establish the international link related to digital olfaction among a variety of fields such as biology, medicine, computer science, electronics, chemistry, mechanical engineering, psychology, art etc. We aim to create devices which not only can capture odors, but also turn them into digital data as well as transmit them everywhere in the world and restitute the original odor.

We look forward to welcoming you in Tokyo for this particular event.

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

7ᵗʰ Digital Olfaction Society Annual Meeting

November 29-30, 2022 – Tokyo, Japan

AP Tokyo Yaesu Dori – Convention Center
KPP Yaesu Building, 12th Floor, Chuo-ku, Kyobashi 1-10-7, 104-0031, Tokyo

AP 東京八重洲通り, 〒104-0031, 東京都中央区京橋 1 丁目 10 番 7 号, KPP 八重洲ビル 12 階

Conference Agenda

Day 1 – November 29, 2022

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

8h50   **Welcome Note & Introductory Remarks**

Jesus Lozano Rogado, President of DOS, University of Extremadura, Spain

Marvin Edeas, Founder of DOS, Institut Cochin, INSERM U1016, Université de Paris, France

Session 1: Digital Olfaction: Recent Advances, Research & Development and Perspectives

Chairpersons: Marvin Edeas and Jesus Lozano Rogado

9h00   **40 Years of Electronic Noses: Main Improvements and Future Trends**
Jesus Lozano Rogado, DOS President, University of Extremadura, Spain

9h30   **Scent Technologies at the Turn of the Century: Initial Histories and Findings**
Simon Niedenthal, Malmö University, Sweden
Jas Brooks, University of Chicago, USA

10h00 **Olfactory Receptors and Microbiota: Effects on Wound Healing**
Marvin Edeas, Founder & Chairman of the Digital Olfaction Society Committee, Institut Cochin, INSERM U1016, Université de Paris, France

10h30 Coffee Break & Network Session

Chairpersons: Jesus Lozano Rogado and Marvin Edeas

11h10 **How Wearable Technologies Can Support Scientific Research About the Human Reactions to Olfactory Stimuli?**
Alessandro Tonacci, The Institute of Clinical Physiology, National Research Council of Italy, Italy (online talk)

11h40 **Mixture Coding and Segmentation in the Anterior Piriform Cortex**
Dan Rokni, Hebrew University, Israel (online talk)

12h10 **Canine Medical Scent Detection of Samples of SARS-CoV-2 Infected Individuals: Current Opportunities and Pitfalls**
Holger Volk, University of Veterinary Medicine Hannover, Germany (online talk)

12h40 Lunch Break & Network Session

Chairperson: Daniel Martín Vertedor

13h40 **E-nose Analysis of Exhaled Breath for Improving Diagnosis in Patients with Respiratory Failure**
Laura Capelli, Politecnico di Milano, Italy

14h10 **Gas Sensors and Electronic Noses: Recent Developments at Spanish National Research Council**
José Pedro Santos, Instituo de Tecnologías y de la Información ITEFI-CSIC, Spain

14h40 **New Horizons in Application of Digital Olfaction for Table Olive Industry**
Daniel Martín Vertedor, Scientific and Technological Research Center of Extremadura (CICYTEX-INTAEX), Spain

15h10 Coffee Break & Network Session

Chairperson: Laura Capelli

15h40 **Bioelectronic Tongues Dedicated to Wine Analysis. Enhancing the Capabilities Using Nanomaterials**
Maria Luz Rodriguez-Mendez, Universidad de Valladolid, Spain (online talk)

16h10 ***Internet of Things (IoT)-based Olfaction in Agriculture***
Mahdi Ghasemi, Shahrekord University, Shahrekord, Iran (online talk)

16h40 **E-Nose Quality Evaluation of Extra Virgin Olive Oil Stored in Different Containers**
Antonio Fernández, *University of Extremadura, Spain*

16h50 **Graphene-based Electronic Olfaction Sniffing Out Smell with Superb Olfactory Performance**
Gianaurelio Cuniberti, TU Dresden, Germany (online talk)

17h00 **An Insight into Insular Cortex and Limbic Networks Activation during Olfactory Stimulation as a Support Treatment for Chronic Pain: A Pilot Study**
Mariaconsiglia Santantonio, Università Cattolica del Sacro Cuore, Italy (online talk)

17h10 **Blind Prediction Test for Odor Concentration with an Electronic Nose: A Real Case of Study**
Fatma Ayouni, Ellona, France (online talk)

17h20 **Wide-Band Infrared Spectrometer for Machine Olfaction**
Eivind Jülke Røer, *Tunable AS, Norway (online talk)*

17h30 **Feeling Odors Through Colors and Sounds**
Marco Rossoni, Politecnico Di Milano, Italy *(online talk)*

17h40 **Sensitive and Selective Detection of Microrna in Human Serum Using Supervised Machine Learning**
Junru Zhang, Grado Department of Industrial & Systems Engineering, Virginia Tech, USA (online talk)

17h50 **End of the first day**

19h30 **Speakers Dinner (for ticket holders only)**
Contact us if you wish to register.

Day 2 – November 30, 2022

8h50   **Opening of the second day**

Session 1: Digital Olfaction: Recent Advances, Research & Development and Perspectives (Continued)

Chairperson: Simon Niedenthal

9h00   **Disposable Sensors for On-Site COVID-19 Testing**
Can Dincer, University of Freiburg, Germany (online talk)

9h30   **Nanoplasmonic Biosensors for Virus Detection**
Nikhil Bhalla, Nanotechnology and Integrated Bioengineering Centre, Ulster University, The United Kingdom (online talk)

10h00   **In Search of Covid-19: The Ability of Biodetection Canines to Detect Covid-19 Odors from Clinical Samples**
Marthe Charles, University of British Columbia, Canada

10h30 Coffee Break & Network Session

11h00   **Advancement in Mitochondrial Biophysics in Space**
Marshall Porterfield, NASA Genelab Founder and Former Division Director for Space Life and Sciences (SLPS) at NASA

11h15   **Mars architecture Designs, Microbiome Research for Longevity and Resilience, Worlds First Alpha Biota Skin Diffusion System to Modulate Human Health And Wellness**
Vera Mulyani, Visionary Architect, specialized in the master planning next destinations on Mars with Mars City Design

Session 3: DOS 2022 Demonstrations

11h25   **General Presentation of Demonstrations**
Before the practical demonstration, we invite each team to present orally their technology and the process of demonstration (10 minutes by team). During Demonstrations Session, each team will have a dedicated space to show, demonstrate, explain and discuss about his project.

The presentations will be recorded and showcased immediately after the meeting.

Shuji Fujita, Sony Corporation, Japan

Katsuya Ujimoto, Ricoh Company, Ltd., Japan

Jesus Lozano Rogado, University of Extremadura, Spain

Chuanjun Liu, U.S.E. Co., Ltd, Japan

Daniel Martín Vertedor, Scientific and Technological Research Center of Extremadura, Spain

DOS Displaying & Demonstrations

13h45   Brand New Olfactive Age: Olfactive Technologies for Olfactory Measurement and Testing
Shuji Fujita, Sony Corporation, Japan

14h30   Kouawase（香合せ）with Real Time Spectrometry
Katsuya Ujimoto, Ricoh, Japan

15h15   Introducing Miniature Device for Digital Olfaction: Sniffing Smartwatch
Jesus Lozano Rogado, President of DOS, University of Extremadura, Spain

15h45 Coffee Break

16h00   Demonstration of Aroma Oil Recognition by Deepsniffer
Chuanjun Liu, U.S.E. Co., Ltd., Japan

16h45   Sensory Panel for Table Olives using Digital Olfaction Technology
Daniel Martín Vertedor, Scientific and Technological Research Center of Extremadura, Spain

Posters Presentations of DOS 2022

Chemiresistive Sensors With Meta-Learning Ability: A New Possibility for Odor Sensing
Chuanjun Liu, Research Laboratory of U.S.E. Co., Ltd, Japan

Detection of Umami Using Floating Electrode-Based Bioelectronic Tongue through Honeybee Taste Receptor
Hyung Wook Kwon, Incheon National University, Republic of Korea

Ortogonal Array Composed By Optical and Resistive Sensors for Digital Olfaction Devices
Jesus Lozano Rogado, University of Extremadura, Spain

Portable Electronic Nose for the Detection of Respiratory Disease Biomarkers through the Breath
José Pedro Santos, Instituo de Tecnologías y de la Información ITEFI-CSIC, Spain

Evaluation of the Olfactory Quality of Roasted Coffee Beans Using a Digital Nose
Daniel Martín-Vertedor, Technological Institute of Food and Agriculture CICYTEX-INTAEX, Spain

Detection of TCA in the Cork Stopper Industry Using Digital Olfaction Technology
Jesus Lozano Rogado, University of Extremadura, Spain

17h30   Discussion with the scientific committee: Digital Olfaction Society: What's Next?

DOS Tokyo 2023 Challenge: From Tokyo to Worldwide

DOS Space 2023 Challenge: Digital Olfaction from Earth to Space: Reality or A Dream?

18h00   Digital Olfaction Awards 2022

18h30   End of the 7th DOS Annual Meeting 2022