

DIGITAL OLFACTION SOCIETY

Tokyo Annual Meeting

A nighttime photograph of the Tokyo skyline. The Tokyo Tower is the central focus, illuminated in a bright yellow-orange glow. To its left, the Rainbow Bridge is visible, with its white towers and suspension cables illuminated. The background is filled with numerous skyscrapers, their windows glowing with city lights. The sky is a deep blue, suggesting twilight or early evening. The overall scene is a vibrant and iconic representation of Tokyo at night.

December 3-4, 2018 - Tokyo, Japan

SCIENTIFIC AGENDA

Digital Olfaction Society Annual Meeting 2018

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... The idea is to create devices which can capture odors, turn them into digital data so as to transmit them everywhere in the world ...

(Marvin Edeas, Founder of DOS, 2013)

After the success of the three DOS World Congresses (Berlin, 2013 and Tokyo, 2014-2016) and the two congresses on Olfaction & Issues (Paris, 2010 and Milano, 2016), the scientific committee decided to organize its annual meeting to cover the two topics: **Digital Olfaction Society Annual Meeting** will be held in **Tokyo** in **December 3-4, 2018**.

This meeting will be divided in three parts:

- **Olfaction & Issues 2018: Science, Applications, Strategies & Marketing**
Day 1 - December 3, 2018
- **Digital Olfaction 2018: Recent Advances & Perspectives**
Day 2 - December 4, 2018
- **Digital Olfaction Society Challenge 2018**
Day 2 - December 4, 2018

Olfaction & Issues 2018: Science, Applications & Strategies – December 3, 2018

The first part of the meeting is dedicated to **Olfaction & Issues in 2018**. The aim of this first part is to present the latest advances and applications of olfaction in health and sciences, life style and marketing.

The manipulation of olfaction can introduce substantial advantages in health, design and marketing if we integrate odors in appropriate and ingenious ways. The design and marketing of odors is not only associated with perfumes, but also with other items that are typically odorless, such as buildings and places. It is possible to create odors that induce memorable emotions in users. We can accomplish this if we govern and simulate the entire process of production, perception, and evolution of olfactory communication and messages, which must be consolidated with the other sensory receptors.

Olfaction & Issues 2018 will highlight different strategic topics:

- Olfaction 2018: recent scientific advances & perspectives - the sense of smell in health
- Olfaction & marketing: towards a personalized emotional perspective

Digital Olfaction 2018: Recent Advances & Perspectives – December 4, 2018

In the second day, the scientific committee will allocate time to discuss about **the digital olfaction**, and the oral talks will be combined to demonstrations of olfactory displays. People will take part to those demos and will enjoy mysterious experience to have digital olfaction in the daily life.

The aims of Digital Olfaction part are 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

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Digital Olfaction Society Meeting 2018 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?
- Digital Olfaction and Artificial Intelligence: in this session, we will highlight how artificial intelligence will push the digital olfaction into and new level.

Challenge: call for Innovations and Demonstrations

The Scientific Committee invites all academics and industries to present their innovations and products in the olfaction and digital olfaction world by submitting an abstract.

Moreover, the Scientific Committee invites also the academic and industrial teams to present the most innovative appliances, devices, methods, ideas ... during the demonstration session.

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

Prof. Marvin Edeas - MD, PhD

Founder & Chairman of the Digital Olfaction Society

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Preliminary Program

Day 1 – December 3, 2018 – Olfaction & Issues

7h30 Welcoming of attendees

8h55 Opening Ceremony

Session 1: Olfaction 2018: Recent Scientific Advances & Perspectives The Sense of Smell in Health

Olfaction science & applications

Taste, olfaction and effects on the gut

Olfaction, appetite and obesity: the brain mechanisms

The olfactory system as a metabolic sensor?

Olfaction and ageing: what is the impact of olfaction on seniors' appetite and well-being?

Olfactory communication of stress and anxiety

Effects of odors and fragrances on mood and physiology

Odors, fragrances, emotions and ageing

Olfaction and perfumes: towards a new generation of perfumes

9h00 **Olfaction and Digital Olfaction: Now & Tomorrow**

Marvin Edeas, Founder & Chairman of the Digital Olfaction Society Committee, France

9h30 **Smell and smell perception: Recent advances & perspectives**

Andreas Keller, Rockefeller University, USA

10h00 **Smell loss: a marker of cognitive decline, dementia, and mortality**

Maria Larsson, Stockholm University, Sweden

10h30 Coffee Break & Poster Session

11h00 **Can mice detect odour of neoplasm before clinical symptoms?**

Agata Maria Kokocińska-Kusiak, Institute of Genetics and Animal Breeding of the Polish Academy of Sciences, Poland

11h30 **A non-invasive measure of olfactory bulb function in humans**

Johan Lundström, Department of Clinical Neuroscience, Karolinska Institute, Sweden

Short oral presentations & Call for innovations

12h00 **Smells of a modern world: How to identify and characterize odorants in contemporary materials**

Christoph Wiedmer, Fraunhofer-Institute for Process Engineering and Packaging IVV, Germany

12h30 Lunch Break & Poster Session

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Session 2: Olfaction 2018: Towards a Personalized Emotional Perspective

How the incorporation of scents could enhance the immersive virtual experience?

How odor contexts influence the perception of facial expressions of emotions?

Olfaction as a tool for marketing communication

14h00 **Exploration into olfaction and experiential strategy: State of Art**

Djamchid Assadi, Groupe ESC Dijon-Bourgogne, France

14h30 **Sexing up human pheromones: How a corporation created a “scientific” myth**

Tristram Wyatt, University of Oxford, United Kingdom

15h00 **Enhancing user interaction with olfactory experiences**

Marina Carulli, Politecnico di Milano, Italy

15h30 Coffee Break & Poster Session

16h00 **The Language of Smell: Connecting Linguistic and Psychophysical Properties of Odors**

Jonas Olofsson, Stockholm University, Sweden

16h30 **The power of scents – Scent in context**

Peter de Cupere, PXL-MAD School of Arts in Hasselt, Belgium

17h00 **Short oral presentations & Call for innovations**

18h30 **End of the first day**

20h00 **DOS Dinner 2018**

To participate to the dinner, please register online before November 19.

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Day 2 – December 4, 2018 – Digital Olfaction

8h25 Opening of the second day

Session 3: Digital Olfaction: Recent Advances, Research & Development and Perspectives

Olfaction, obesity & skin-ageing: strategies to modulate olfactory receptors

Digital olfactory nanoarrays for disease detection from breath and skin

A metric approach to olfactory perceptual space

Odor processing in biological and artificial olfactory systems

Nanomechanical gas sensor: recent advances & perspectives

Electronic-nose-based analysis

Development of molecular recognition materials

Odor visualization

9h00 **Miniaturized electronic nose systems for digital olfaction: present and future applications**
Jesús Lozano Rogado, University of Extremadura, Spain

9h30 **Bio-electronic nose: a mouse nose as an ultra sensitive and versatile chemical detector**
Dmitry Rinberg, NYU Neuroscience Institute, USA

10h00 **Sniff-cam for real-time imaging of volatile chemicals**
Kohji Mitsubayashi, Tokyo Medical and Dental University, Japan

10h30 Coffee Break & Poster Session

11h00 **Detection of target odors in cluttered environments**
Dan Rokni, The Hebrew University, Israel

11h30 **Digital olfaction: imaging an odor**
Thierry Livache, CSO of Aryballe Technologies, France

12h00 **Smell-enabled VR Games for Olfactory Training**
Simon Niedenthal, Malmö University, Sweden

12h30 Lunch Break & Poster Session

Short oral presentations & Call for innovations

13h30 **Exploration of biological olfactory mechanism using randomly mixed receptor signals decoded by reservoir computing**
Sanato Nagata, Hitachi, Ltd., Japan

13h45 **OWIDGETS: A Device-IndEpendent toolkit for olfactory experience design**
Emanuela Maggioni, University of Sussex, United Kingdom

14h00 **Neural Network within an Olfactory Sensory Unit for Nestmate and Non-nestmate Discrimination of Ant**
The Ultrastructures and Mathematical Simulation for olfactory information modification
Mamiko Ozaki, Kobe University, Japan

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- 14h15 **Scents and memory in virtual reality**
Veikko Surakka, University of Tampere, Finland
- 14h30 **Challenges in the application of machine learning methods to the Prediction of odor and how to address them**
Sebastian Hettenkofer, Fraunhofer Institute for Integrated Circuits IIS, Germany
- 14h45 **Odor sensing and classification by using machine learning**
Sigeru Omatu, Osaka Institute of Technology, Japan
- 15h00 **Stability of the vortex ring trajectory by the shape of the APERTURE for generating scent fields**
Kyuma Watanabe, Meijo University, Japan

15h30: Digital Olfaction Society World challenge 2018: Displaying & Demonstrations

General presentation of each demonstrations

Before the practical demonstration, we invite each team to present orally their technology and the process of demonstration (5-10 minutes by team). During Demonstrations Session, each team will have a dedicated space to show, demonstrate, explain and discuss about his project.

Among the teams already involved:

Japan: Tokyo Medical & Dental School

Spain: Electrical, Electronic and Automation Engineering Department, Industrial Engineering School, University of Extremadura

USA: Monell Chemical Senses Center

France: CSO Grenoble

If you are interested to present your innovation in this demonstration session, please don't hesitate to contact us.

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Digital Olfaction Society World Challenge 2018

The Scientific Committee invites all teams to apply for the first world challenge of the Digital Olfaction Society.

How does it work?

The idea is the following:

- 1) to capture odors from Tokyo
- 2) to turn them into digital data
- 3) to transmit and reconstitute them in Paris

DOS Date

The first transmission of odors will be present during Tokyo Digital Olfaction Meeting on December 4.

If your team would like to take part this challenge, please contact us to present your project.

17h30 Discussion - Questions / Answers about Digital Olfaction

- What is most crucial for progressing the field of digital olfaction forward and to keep it as innovative as possible: new advanced materials? New transducers? Algorithms? Product design? Applications?
- How lab results in digital olfaction could be translated to commercial production, while passing through all regulatory (tough) roles. An example could be given for the case of the use of digital olfaction as a diagnostic tool for diseases.

Final Discussion & Concluding Remarks

- Perspectives & Opportunities
- Next strategic step for Digital Olfaction Society: Digital Olfaction and Artificial Intelligence: the next tsunami

18h00 End of DOS Annual Meeting 2018



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Moreover, the Scientific Committee invites also the academic and industrial teams to present the most innovative appliances, devices, methods, ideas ... during the demonstration session:

- Digital Scent Media: Scented SMS, e-mail, websites, USB flash driver, CD, DVD, scented-print
- Digital olfaction at the service of Human Health: Pattern mimicking the sniffing dogs, e-aromachology, nursing-homes, psychiatric hospitals, smell icons for blind people, olfactory diagnosis
- Formation and Olfactory Memory : Class-rooms, cooking shows
- Olfactory Marketing & Neuromarketing: Olfactive ads, olfactory packaging, interactive website, QR olfacodes, scented-menu....

- Food Industry : Quality & safety control of food products
- Digital Cosmetology : Own fragrance creation on line, smell-E-market
- Olfaction and Jewellery : Revolutionary watches, alarm-radio, scented brooch
- Olfactory Entertainment : Olfactory 3D movie-theaters, home's gadgets, guided-tour in biology & perfumery museums
- Digital scents at the service of Army: Simulating training systems, detection of danger, perfumes of military attack, explosive detection devices
- Interactive scented games : Odorant teddy, video games
- Housekeeping, Coziness & Safety at home
- Olfaction & Auto industry : Olfactive attention assistance for tired driver
- Artificial Intelligence and Digital Olfaction
- And many others...

Digital Olfaction Society - Network Session

The Network Session is organized during DOS demonstrations session.

The objective of the Network Session is to provide a platform which brings together stakeholders involved in olfaction and digital olfaction, and especially in the field the valorization of digital olfaction applications and products:

- Food industries
- Cosmetics
- Phone companies
- Car Industries
- Artificial Intelligence
- Others

DOS 2018 Demonstrations

The Scientific Committee invites all academic & industrial teams to present the most innovative appliances, devices, methods, ideas ... in the digital olfaction field.

You would like to present your innovative devices during DOS Demonstrations 2018?

We remind you that you can submit your project and abstract by the online form **until October 30**.

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DOS 2018 Innovation Award

The DOS World Congress will present the most innovative appliances, devices, methods, ideas... that will be judged by a panel of industrial, engineers and members of the press, who delivered the Innovation Award after having had the opportunity to meet and interact with the new equipment.

For more information: www.olfaction-site.com