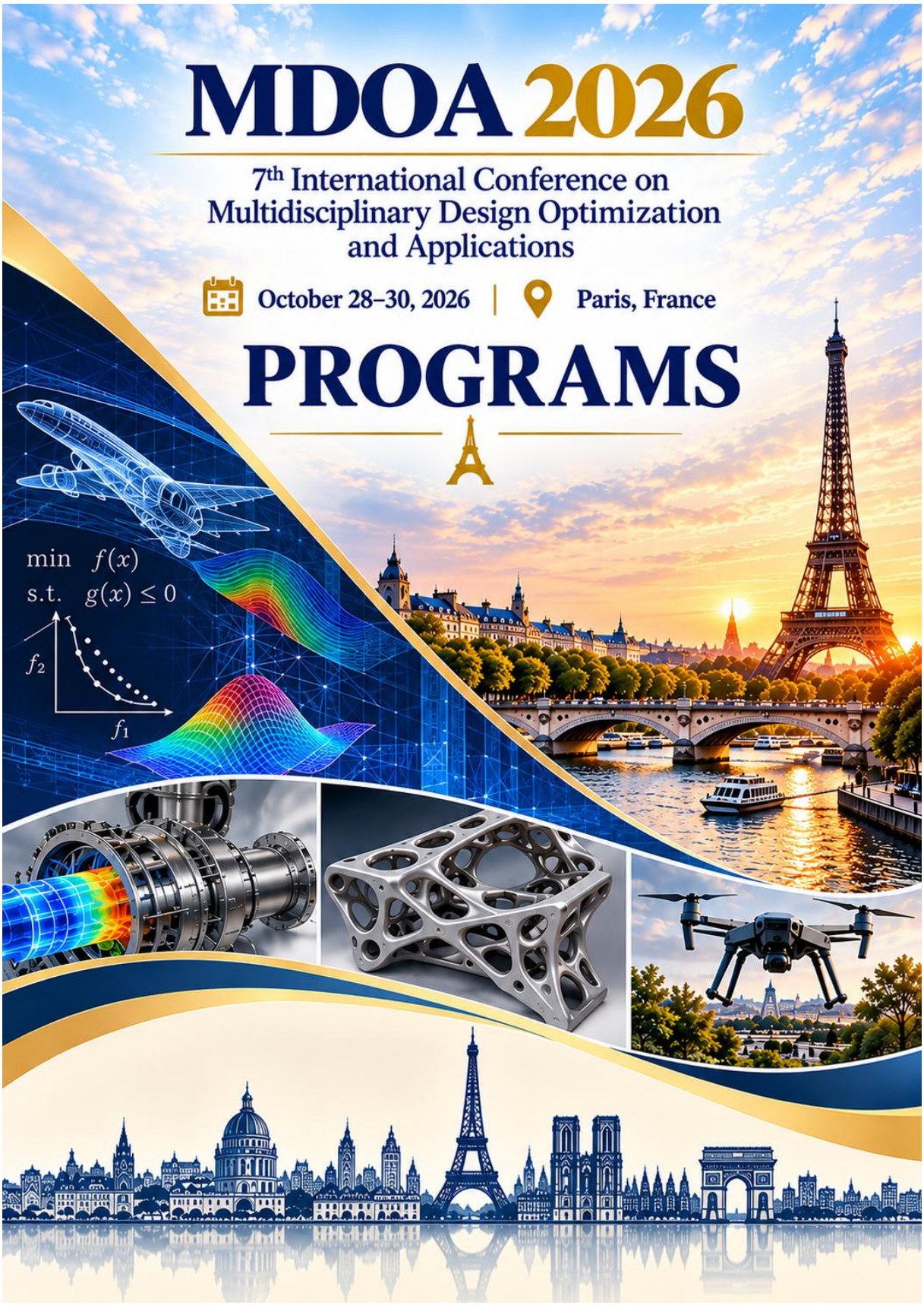
MDOA 2026

7th International Conference on
Multidisciplinary Design Optimization
and Applications

October 28–30, 2026 | Paris, France

PROGRAMS



Welcome Message from the Organizing Committee

7th International Conference on Multidisciplinary Design Optimization and Applications (MDOA 2026)
October 28–30, 2026 | Paris, France

On behalf of the Organizing Committee, it is our great pleasure to welcome you to the **7th International Conference on Multidisciplinary Design Optimization and Applications (MDOA 2026)**, taking place in Paris, France, from October 28 to 30, 2026. The MDOA conference series has a long and meaningful history, beginning in 2007 with its first edition in Besançon, France. Since its inception, MDOA has served as an international platform bringing together researchers, academics, engineers, and industrial experts to exchange knowledge, share innovative ideas, and explore advances in multidisciplinary design optimization and its applications.

Over the years, the conference has evolved alongside major scientific and technological developments, expanding its scope to address emerging challenges in computational mechanics, structural optimization, advanced materials, artificial intelligence, machine learning, digital twins, and sustainable engineering design. This multidisciplinary approach remains at the heart of MDOA's mission: fostering collaboration across scientific disciplines and promoting innovative solutions to complex engineering problems.

The 2026 edition represents another important milestone in this journey. Hosted in the historic and inspiring city of Paris, MDOA 2026 offers an excellent opportunity to strengthen international scientific cooperation, establish new research partnerships, and encourage meaningful exchanges between experienced researchers and the next generation of scientists and engineers.

We are particularly pleased to welcome distinguished keynote speakers, contributing authors, and participants from different countries and institutions. Their expertise, scientific contributions, and active engagement are essential to the success and continued development of this conference series.

We would like to express our sincere gratitude to the Scientific Committee, reviewers, keynote speakers, institutional partners, sponsors, and all members of the Organizing Committee for their dedication and invaluable support. Special thanks are also extended to all authors and participants whose contributions make MDOA 2026 a vibrant forum for scientific exchange.

We sincerely hope that MDOA 2026 will inspire new ideas, stimulate fruitful collaborations, and contribute to advancing multidisciplinary optimization research worldwide.

We wish you an enjoyable, productive, and memorable conference in Paris.

With our warmest regards,

The Organizing Committee
MDOA 2026

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COMMITTEES

Chairs, organizing committee, scientific advisory board, and journal/editorial committee.

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How to Reach the Conference Venue

Information for Participants

Conference Venue

Saint-Germain-des-Prés Campus (BU Saint-Germain-des-Prés)
45 Rue des Saints-Pères
75006 Paris, France

Located in the heart of Paris, in the Saint-Germain-des-Prés district, on the Left Bank of the Seine.

By Metro

- Line 4 – **Saint-Germain-des-Prés**
  Approximately 5 minutes' walk.
- Line 12 – **Rue du Bac**
  Approximately 4–5 minutes' walk.
- Line 10 – **Mabillon**
  Approximately 7 minutes' walk.

By Bus

- Line 39 95 – **Stop at Jacob**
  Approximately 1–2 minutes' walk.
- Line 63 87 – Stop at **Saint-Germain-des-Prés**
  Approximately 4–5 minutes' walk.
- Line 86 – Also serves the Saint-Germain-des-Prés area.

By RER

- RER B or C – Get off at Saint-Michel, then continue by walking or metro.
- RER E or C – Get off at Musée d'Orsay, then continue by walking or public transportation.

By Car or Taxi

- Enter the address: **45 Rue des Saints-Pères, 75006 Paris** into your navigation system.
- Public parking facilities are available in the surrounding Saint-Germain-des-Prés area.
- Parking spaces may be limited, so **public transportation is strongly recommended.**

Venue Entrance

- Enter the campus at 45 Rue des Saints-Pères.
- To reach the **Saint-Germain-des-Prés University Library (Bâtiment Jacob),** cross the main entrance hall and continue into the courtyard.
- The library is located on the left, on the ground floor.

Conference website
https://www.mdoa2026.org/

Paris public transportation
https://www.ratp.fr/

Interactive map
View on Google Maps

See you in Paris

MDOA 2026
Organizing Committee

MDOA 2026

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Multidisciplinary Design Optimization
and Applications

GALA DINNER

AT

LE PROCOPE

PARIS

DEPUIS 1686

The Oldest Café in Paris

A Historic and Unique Venue
in the Heart of Saint-Germain-des-Prés

Thursday
29 October 2026
19:00 – 22:30

Le Procope
13, rue de l'Ancienne Comédie
75006 Paris, France

A Unique Historic Venue
Founded in 1686, Le Procope is the oldest café in Paris, a legendary place frequented by writers, philosophers and great personalities.

LOCATION

HOW TO REACH

METRO
Nearest station: Odéon
4 10
5 minutes walk (400 m)
Exit: Place de l'Odéon, then walk along Rue de l'Ancienne Comédie.

BUS
Lines 63, 70, 86, 87, 96
Stop: Saint-Germain-des-Prés
5 minutes walk
63 70 86 87 96

TAXI / RIDE-HAILING
Address to give the driver:
Le Procope
13, rue de l'Ancienne Comédie
75006 Paris
Located in the Saint-Germain-des-Prés district, close to Odéon and the Luxembourg Gardens.

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PROGRAM

Wednesday, October 28th

14:00-18:00	**REGISTRATAION**

Thursday, October 29th

9:00 - 9:15	**WELCOME CEREMONY**
9:15 - 9:55	**Keynote lecture 1 : Prof. Jaafar GABER** ***University of Technology of Belfort Montbeliard, France*** **Title : Approaches to implementing programmable matter: development of reusable and resettable programmable devices** ***Location : Hall Claude Bernard (4th Floor)*****/ Online channel 1**

9:55 - 10:25	**Group Photo &** **Coffee break**

10:25 - 11:00	**Keynote lecture 2 : Dr. Mathieu BALESDENT** ***Director of Research : ONERA – The French Aerospace Lab, France*** **Title: Multiphysics system analysis and optimization under uncertainty** ***Location : Hall Claude Bernard (4th Floor)*****/ Online channel 1**

11:00-12:15	**Session B1** **Room : Mendel B** (Floor 1) **/ Online channel 3** **Chairman : Joseph ZARKA**
11:00-11:15	**Casting Constrained Optimization of Post-tensioned Concrete Slab with Stay in place 3D Printed Formwork** *Edosa Tesema and Oded Amir*
11:15-11:30	**Computational Design Strategies for Auxetic Metamaterials: From Topology Optimization to AI-Based Design** *Intan Mahardika, Abel Cherouat, David Bassir, Kasturi Borah and Mohammad Talha*
11:30-11:45	**Topology optimization of PEMFC channels using a deshomogenization method** *Luca Gorini and Sébastien Kawka*
11:45-12:00	**The Stiffness-ductility trade-off in bio-based PA11-kraft lignin composites: from microstructural tomography to predictive finite element modeling**

	Meriem Bouchetara, Jaianth Vijayakumar, Sofiane Belhabib, Ahmed Koubaa, Martin Beauregard, Mustapha Nouri, Mahfoud Tahlaiti, Sofiane Guessasma
12:00 -12:15	**A MATLAB-ANSYS Framework for Multi-Objective Optimization of a Submerged Marine Propeller using NSGKSO** *Fatima Daqaq, Rabii El Maani, Zineb Tabbakh and Siham Ouhimmou*

12:15 –14:00	**LUNCH**

14:00 - 14:30	**Keynote lecture 3 : Dr. Hichame MAANANE** ***Vice President IEEE (Section 8)*** **Title: Next-Generation Industrial AI: Architecting Safe, Autonomous, and Self-Healing Systems** ***Location : Hall Claude Bernard (4th Floor)*** **/ Online channel 1**

14:30-16:00	**Session B2** **Room : Mendel B** (Floor 1) **/ Online channel 3** **Chairman : Dr. Patrice SALZENSTEIN**
14:30 – 14:45	**Robust Optimization of Optical and Photonic Metrology Systems through Uncertainty Evaluation and International Intercomparison Frameworks** *Patrice Salzenstein, David Bassir*
14:45 – 15:00	**Optimization Strategies for High-Stability Quartz Oscillators: A Review of Modeling, Artificial Intelligence and Advanced Control Approaches** *Patrice Salzenstein and Frédéric Lefebvre*
15:00 – 15:15	**Development and Validation of Vat Photopolymerization-Manufactured Alumina Cutting Tools for Stainless Steel Turning** *Alejandro Méndez-Pérez, Alberto Merino-Castro, Pablo Rodríguez-González and Ana Isabel Fernández-Ábia*
15:15 – 15:30	**Prediction of Elasticity Properties of Textile Material Using Artificial Neural Networks** *Mohamed Ajerd Azeggagh, Adnane Azzouzi and Sofiane Guessasma*
15:30 – 15:45	**An Engineering-Informed Trustworthy AI Framework for Predicting Concrete Compressive and Splitting Tensile Strength from Ultrasonic Pulse Velocity (UPV) Measurements with Explainability, Uncertainty Quantification, and Applicability-Domain Assessment** *Ahmed N. Elbelacy, Saeed Elbelacy and Andrew Gouda*
15:45 – 16:00	**CFD Based surrogate modelling of low Reynolds number UAV wings** *Junjuan YAO, Davdi BASSIR, jean Francois DEU*

16:00-16:30	**Coffee break**

16:30-17:45	**Session B3** **Room : Mendel B** (Floor 1) **/ Online channel 3** **Chairman : Prof. Abdelkhalek ELHAMI**
16:30-16:45	**Dynamic Courier Positioning and Demand Coverage with Heterogeneous Vehicles** *Mohammadamin Tavasoli and Roberto Baldacci*
16:45 -17:00	**Integrated Container Retrieval and Repair Scheduling with Stack-Dependent Availability and Heterogeneous Repair Networks** *Parham Rezaei Baghbadorani*
17:00- 17:15	**A Hybrid CFD–GMDH Framework for Predicting Wind-Induced Pressure on Buildings** *Soufiane Elouardi, Bouchaib Radi, David Bassir and Abdelkhalek Elhami*
17:15 -17:30	**Task-Based Parallel Framework for Non-Intrusive Global–Local Enriched GFEM** *Túlio Marques, Ramon Silva and Felício Barros*
17:30 -17:45	**Topology Optimized Tunable Metamaterial for Mechanical Wave Attenuation** *Mohammad Mehdi Mahjoub, Francisco Gomez Silva, Javier Crespo Miguel, and Ramon Zaera Polo*

19:00-21:00	**Gala Event**

Friday, October 30

09:00–10:15	**Session B4** **Room : Mendel B** (Floor 1) **/ Online channel 3** **Chairman : Prof. David BASSIR**
09:00–09:15	**Optimization of Urban Low-altitude Logistics Path Based on Improved A* Algorithm** *Yixuan Cao and Chengming Zhu*
09:15–09:30	**Bus–Metro Timetable Coordination Optimization with Individual Waiting-Time Non-Deterioration Guarantees: An Empirical Study at Estação Lapa** *Haole Bai, Chengming Zhu and Hanbo Wei*
09:30–09:45	**Research on deterioration mechanism and numerical simulation of tunnel surrounding rock under hydrochemical damage** *Ruixin Niu*

09:45–10:00	**Effects of Hard-Shoulder Opening Prompt Modality on Driving Behavior in Mixed Trafffc with Automated Vehicles** *Peiping Zhao, Shaohua Wang, Xinzhen Wang, Yu Wang, Fangyi Chen, Baohua Guo*
10:00–10:15	**Asymmetry of Left and Right Lane-Changing Behavior on Highways: A Study Based on the HighD Dataset** *Xinyu He and Kefeng Wang*

10:30 – 10:45	**Coffee break**

10:45-12:00	**Session B5** **Room : Mendel B** (Floor 1) **/ Online channel 3** **Chairman : Prof. Pierre DAHOO**
10:45–11:00	**Multimodal Fusion Network for Road detection Fusing Camera, Lidar and Ego-Pose** *Anthony Sigama, Baohua Guo, James Chakwizira and Tendayi Gondo*
11:00–11:15	**A Compact Yet Effective Morphological and Wavelet-Energy Feature Vector for ECG Heartbeat Classification** *Ouafae El Melhaoui, Redouane Mghaiouini, Hassan Naanani and Samir Elouaham*
11:15–11:30	**Malware Families as Dynamical Systems: Why Drift Detection Outperforms Feature-Space Forecasting** *Noor Muhannad Ahmed*
11:30–11:45	***Bayesian Network-Based Multi-Source Error Analysis Method for Planetary Gear Transmission Systems*** *Fei Wan, Xi Lu, Jianrun Zhang and Beibei Sun*
11:45–12:00	**Numerical Investigation of Triply Periodic Minimal Surface Lattices for Shock-Absorbing Protective Textile Applications** *Alaeddine Zereg, Nadhir Lebaal, Mohammed Rouhi and Sofiane Guessasma*

12:30 –14:00	**LUNCH**

19:30 -21:00	**PARIS BOAT TRIP**

Online Access Links

Use the channel indicated for your session in the conference program. Click a meeting link below to join.

Channel / Platform	Meeting link
Online Channel 1 Zoom	Join Online Channel 1
Online Channel 2 Microsoft Teams	Join Online Channel 2
Online Channel 3 Microsoft Teams	Join Online Channel 3

Important: Meeting passcodes will be sent to registered participants by email before the conference.

Instructions for Online Participants

All program times are in Paris local time (CET, UTC+1).

- Please join your assigned online channel at least **10 minutes before** your scheduled session.
- Use your full name as your display name.
- Keep your microphone muted when not speaking.
- Presenters should test their microphone, camera, and screen-sharing functionality before their presentation.
- Please follow the instructions provided by the session chair.