Call for papers

HiSST 2027

The 5th International Conference on High-Speed Vehicle Science and Technology

May 23rd-28th, 2027, Beijing·China



www.hisst2027.com

CONFERENCE KEY DATES

· Abstract Submission Opening:	06 July, 2026
· Online Registration Opening:	06 July, 2026
· Abstracts Submission Deadline:	31 October, 2026
· Notification of Acceptance to Authors:	15 January, 2027
· Papers Submission Deadline:	31 March, 2027
· Preliminary Programme:	30 April, 2027
· Final Programme:	12 May, 2027
· Conference Dates:	23-28 May, 2027

CEAS
Council of European Aerospace Societies

STAM

CSA
CHINESE SOCIETY OF ASTRONAUTICS

Institute of Mechanics CAS
~1956~

The 5th International Conference on High-Speed Vehicle Science and Technology

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INVITATION MESSAGE

Thanks for picking up this flyer, indicating your interest in the various topics we offer during this unique international event. We hope you will get inspired to attend in person the already 5th edition of the HiSST Conference, hosted by the Institute of Mechanics, Chinese Academy of Sciences (CAS) under the aegis of CEAS (Council of European Aerospace Societies) in Beijing, China from May 23rd to 28th 2027.

As previous HiSST editions, HiSST 2027 will provide the perfect event to share your work with your peers and develop open and fruitful interactions with specialists from research institutions, academia, and industry worldwide, covering all aspects of high-speed aerial and space vehicles development from fundamental research to final products.

Leading specialists from academia, research centers and industrial companies will provide a global view of worldwide R&D effort in the field of high-speed flight. Internationally recognized experts will give several key notes lectures addressing specific challenges and major topics in the field.

Numerous parallel technical sessions will allow you to discover the latest results obtained worldwide. Focused technical workshops on high-speed vehicle science and technology will allow you to share ideas with your peers and develop some common activities in a collaborative forum.

All activities will take place at the unique Beijing Huariou International Conference Hub at 65 km from the International Beijing airport (PEK). The blend of picturesque lake views and modern conference facilities will be the setting for the technical and posters sessions, workshops, technical exhibition, coffee breaks and lunches while providing a vibrant networking environment.

Finally, dedicated technical visits on a first-come first-served basis will showcase Chinese capabilities related to High-Speed Flight and High Energy Physics.

Huairou District, the "pearl" of Beijing's northeastern suburbs, not only boasts beautiful natural landscapes, it also carries profound historical and cultural heritage. The Great Wall, built during the Ming Dynasty, unfolds some of its most captivating and diverse stretches in Huairou. These iconic sections make Huairou a must-visit for Great Wall enthusiasts.

We look forward to welcoming you to the 5th HiSST Conference in Beijing, China.

Prof. dr Johan Steelant
Chair of the International
HiSST Technical Committee
ESA-ESTEC

Prof. Jialing Le, CARDC
Prof. Xisheng Luo, CASIC
Prof. Zhan Wang, Deputy director of the Institute of Mechanics, CAS
Local Host of HiSST2027

TECHNICAL VISITS

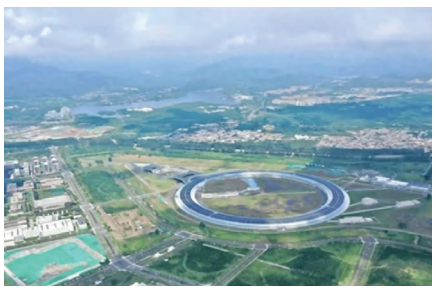
Last conference day (28 May 2027) will be dedicated to technical visits for a limited number of attendees free of charge.



CAS-JF-22



CAS-XBF-2



CAS-HEPS

INTERNATIONAL TECHNICAL COMMITTEE

Australia	Prof. Vincent Wheatley (Univ. of Queensland) Deputy – Dr. Adrian Pudsey (RMIT University)
Brazil	Dr. Marco A.S. Minucci (Institute for Advanced Studies) Deputy – Lucas Galembek (Institute for Advanced Studies)
China	Prof. Xisheng Luo (Institute of Mechanics, Chinese Academy of Sciences) Deputy – Dr. Huan Lian (Institute of Mechanics, Chinese Academy of Sciences)
Europe	Prof. Johan Steelant, Chairman of the HiSST Committee (Host of HiSST-2022) (ESA - European Space Agency) Deputy – Dr. Jeroen van den Eynde (ESA - European Space Agency)
France	Bruno Le Naour, Host of HiSST-2025 (MBDA) Deputy – Cedric Monjaret, Host of HiSST-2025 (ONERA)
Germany	Dr. Moritz Ertl (DLR, German Aerospace Center)
India	Dr. M. Ibrahim (IIT Kanpur) Deputy – Prof. Karthick S. Kandasamy (IIT Hyderabad)
Italy	Dr. Marco Marini (CIRA) Deputy – Prof. Antonella Ingenito ('Sapienza' University of Rome)
Japan	Dr. Hideyuki Tanno (JAXA) Deputy – Prof. Hideyuki Taguchi (Tokyo University of Science)
Korea	Prof. Dr. Jeong-Yeol Choi, Host of HiSST-2024 (Pusan National University) Deputy – Dr. Prof. Bok Jik Lee (Seoul National University)
UK	Prof. Matthew McGilvray (Oxford University) Deputy – Dr. Luke Doherty (Oxford University)
USA	Dr. David Glass (NASA) Deputy – Dr. Adam Siebenhaar, former Chairman of the HiSST Committee (Mach 7H Consulting)



LOCAL ORGANIZATION COMMITTEE

Prof. Jialing Le, CARDC

Prof. Xisheng Luo, CASIC

Prof. Zhan Wang, Deputy director of the Institute of Mechanics, CAS

CONFERENCE TOPICS

High-Speed Missions and Vehicles

- Planned and ongoing national and international high-speed vehicle programs and missions
- Advanced space launcher concepts and high-speed atmospheric flight vehicle concepts
- Design, development and manufacturing of related technologies and components, both for reusable and expendable applications
- Design methodologies and engineering models
- Overall system design and/or performance optimization



Propulsion Systems and Components

- Advanced cycles & concepts
- System & component performance, development & manufacturing: air inlets, isolators, combustors, injectors, ignition, flameholding, nozzles…
- Combustion and mixing processes including ignition, flame-out, instabilities, plasma assistance…
- Airframe interaction and integration
- Conventional, cryogenic & alternative fuels, additives, catalysis
- Fuel systems: feed-lines, pumps, tanks…
- Advanced computational techniques, CFD & engineering models



Thermal, Energy and Management Systems for vehicle, subsystems, and payload

- Thermal protection, heat exchangers, cooling, coating & ablative systems
- Active and Passive systems
- System & component performance, development & manufacturing
- On-board power generation and environmental control
- Design methodologies, CFD & engineering models and advanced computational techniques (multiphysics)



Guidance & Control Systems

- Flight control design and in-flight adaptation
- On-ground and in-flight trajectory optimization techniques
- Health monitoring and management, fault detection isolation and recovery, health and usage monitoring systems
- System & component performance, development & manufacturing
- Advanced computational techniques, CFD & engineering models



SUBMIT YOUR ABSTRACT AT:

www.hisst2027.com **before October 1st, 2026**

Materials and Structures for vehicle and all subsystems

- Metallic & non-metallic materials for hot and cooled structures and thermal protection systems
- Active/functional materials
- Hot, cold and integrated structural architectures including conformal layouts
- Quality control, damage tolerance, structural health monitoring and survivability
- Materials manufacturing and processing
- Advanced modelling & computational techniques

High-Speed Aerodynamics and Aerothermodynamics

- Numerical and experimental studies including aero-thermodynamics, stability-transition-turbulence, SWBLI, MHD, gas physics and chemistry, radiation physics, fluid structure interaction and destructive re-entry
- Numerical and experimental thermal studies incl. passive and active heat transfer, regenerative, transpiration, ablation, pyrolysis, endothermic decomposition…
- Advanced modelling & computational techniques: development and validation
- Multi-disciplinary techniques and models: fluid-structure interaction, conjugate heat transfer, CFD/flexible and rigid body dynamics

Testing & Evaluation

- Ground and in-flight test facilities, flight test operations and simulations
- Diagnostics and data systems
- Scale limitations and facility effects
- Validation and verification
- Facility modelling & simulation



Operation and Environment

- Economic and market analysis including cost modelling
- Regulatory, certification, operation, maintenance, health & safety issues: on-ground and in-flight
- Environmental effects including sonic boom, noise and emissions
- Atmospheric composition – models and effects on performance
- Infrastructure and traffic management

Hypersonic Fundamentals and History

- Aero-thermodynamics, stability-transition-turbulence, SWBLI, MHD, gas physics and chemistry, radiation physics, fluid-structure interaction and destructive re-entry
- Theoretical and analytical thermal studies incl. passive and active heat transfer, regenerative, transpiration, ablation, endothermic decomposition…
- Basic materials science for high temperature and aggressive environment, life-time predictions…
- Historical aspects, analyses and assessments and lessons learned
- Educational initiatives and workforce development activities

NOTES TO AUTHORS

- The selected papers will be presented in a 30 minutes speech at the Conference (included 5 minutes for Q&A).
- An abstract will be selected based on the importance and originality of the subject addressed, on its relevance to the conference theme, on the clarity of its expression.
- The abstract should be a “stand alone” summary that can be used in the compilation of abstracts.
- The abstract should summarize the main objectives of the paper to be presented and outline its conclusions. It should give the International Technical Committee sufficient insight on the paper to be presented at the Conference and enable the selection for oral presentation.
- Work that has been presented elsewhere, and has not been updated, will be considered inappropriate.
- Please note that the Conference official language is English. All documents must be in English.
- Notification by the International Technical Committee will be accompanied by detailed instructions allowing authors to prepare and make the online submission of their full paper.
- Failure to comply with the deadlines and instructions required will entail not having the paper selected and included in the conference proceedings.
- All accepted and presented communications will be published in the online proceedings only available for Conference delegates. The submitted papers must be unclassified.
- Once your abstract is accepted, the authors commit themselves to upload a full manuscript prior to the start of the conference (see conference schedule).
- (Co)-authors grant CEAS the right to collect the HiSST 2027 proceeding freely onto the *CEAS European Aerospace Repository* which is only accessible for the attendees up to the next conference. After that the full proceedings will be made publicly available.

The pre-selection of the Best Paper Awards starts already at abstract level (*AWARDS - The 5th International Conference on High-Speed Vehicle Science and Technology*). Authors are encouraged to describe the novelty of their idea or topic in a clear and concise way within the provided abstract guidelines

REGISTRATION FEE

Category	Early-bird Before 27 Feburary, 2027	Regular After 27 Feburary, 2027	On-site
Delegates	€1050 (¥8400)	€1200 (¥9600)	€1260 (¥10080)
Student /Retiree	€600 (¥4800)	€ 600 (¥4800)	€650 (¥5200)

Registration fees includes:

- Conference session attendance, conference documentation, conference proceedings, coffee breaks, lunches, social events (including Pre-registration and Welcome reception and Gala dinner).
- Special recognition for the awardees of the Best student paper and the Best paper award of the 4th HiSST conference in 2025 at Tours (France).
- For each of these best paper awards, the registration fee is waived for one of the (co)authors attending the 5th HiSST conference in Beijing. Furthermore, CAS is inviting one of the (co)authors to apply for a travel & accommodation grant which covers both the travel cost (airplane ticket) and the accommodation at the conference site throughout the duration of the conference. Once registered on the website, the awardee needs to contact the local organizer, Dr H. Lian, and the HiSST TC chair, Dr J. Steelant for the application details.
- Student/Retiree have the same full access including the events as the delegates.



CONFERENCE VENUE

HiSST2027 will take place at *Beijing Marriott Hotel Huairou*.

From PEK to Beijing Marriott Hotel Huairou, 60km, by taxi approximately 1hrs, 300RMB

From PKX to Beijing Marriott Hotel Huairou, 120km, by taxi approximately 2hrs, 500RMB