



Call for Papers

Released: 25 April 2025

The 41st International Symposium on Combustion will convene at the Kyoto International Conference Center in Kyoto, Japan from Sunday, 26 July through Friday, 31 July 2026. Scientists, engineers, professors, students, industrial practitioners, and others who are interested in combustion are invited to attend and participate in this biennial world congress of **The Combustion Institute**.

Symposium Agenda

The technical program will consist of contributed papers, presented in both oral and poster format sessions, invited lectures, topical reviews, and mini-symposia sessions. Delegates can also contribute a short abstract that will be presented in a **Work-in-Progress Poster (WiPP)** format during the Symposium. Ensuing publication in the **Proceedings of The Combustion Institute (PROCI)** is determined by the *PROCI* editorial board and is not guaranteed based on selection for Symposium presentation.

Technical Program Co-Chairs

Prof. Osamu Fujita

Hokkaido University, Japan

Prof. Venkat Raman

University of Michigan, United States

General Information and Requirements

Several important changes to the International Symposium on Combustion (ISOC) format have been made compared to past symposia. These changes are driven by multiple factors, including a) the need to accommodate a large number of paper submissions while ensuring increased participation by a wider group of researchers, b) to encourage and provide opportunity for the presentation of more novel and diverse research, c) to allow flexible formats to increase engagement of attendees during the conference, and d) to maintain or improve the quality of papers published in *PROCI*.



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Colloquia Structure and Description

A total of 13 colloquium categories will be addressed at the 41st International Symposium on Combustion. These colloquia will be grouped into three categories or themes: 1) Fundamental Processes, 2) Enabling Models, Methods, Tools and Technology and 3) Applications. The details of each group and accompanying colloquia are provided below. When identifying a primary and secondary colloquium during the submission process, authors should consider the scope of the work in their submission. For instance, if kinetic mechanism for ammonia combustion is developed but at gas turbine operating conditions, the choice should still be Chemical Kinetics, but secondary colloquia could point to Energy and Material Conversion and Heating Processes and/or Modeling Approaches.

Fundamental Processes	Focus on physical and chemical processes; could be agnostic to final application	<ul style="list-style-type: none">• Chemical Kinetics• Flame Dynamics and Transport Processes• Turbulent Flames• Detonations and High-speed Combustion• Heterogeneous Combustion and Processes
Enabling Models, Methods, Tools and Technology	Focus on topics that aid combustion science and practice	<ul style="list-style-type: none">• Diagnostics and Experimental Methods• Modeling Approaches• Numerical Techniques• Enabling Concepts
Applications	Focus on applications-specific issues	<ul style="list-style-type: none">• Energy and Material Conversion and Heating Processes• Low-speed Propulsion• High-speed Propulsion and Energetics• Fire and Safety

Fundamental Processes

The topics within this group explore the general and foundational concepts in combustion that could be motivated by but need not directly relate to an application. The exploration is predominantly conducted in canonical configurations that expose the targeted processes:

- **Chemical kinetics**, including the kinetics of hydrocarbons, oxygenated fuels, and alternative fuels, formation of gaseous pollutants and particulates, and elementary reactions
- **Flame dynamics and transport processes**, including exploration of laminar flames and physics aspects of ignition, structure, propagation, extinction, dynamics, and instabilities
- **Turbulent flames**, including exploration of high Reynolds numbers regimes in single and multiphase flames, and physics aspects relevant to ignition, structure, propagation, extinction, dynamics, and instabilities
- **Detonations and high-speed combustion**, including fundamental principles governing compressible reactive flows, dynamic structural and stability issues in flame acceleration, and deflagration-to-detonation transition
- **Heterogeneous combustion and processes**, pertaining to chemical and physical changes in two-phase reacting systems, such as those involving droplets, metal combustion, solid propellants, coal, biomass, waste conversion, and fundamental processes in fire



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Enabling Models, Methods, Tools and Technology

The topics within this group focus on enabling tools that utilize fundamental processes but with broad utility in applications, and are necessary for the successful realization of combustion systems:

- **Diagnostics and experimental methods**, including novel techniques for measuring combustion processes and sensors in practical systems, and data reduction techniques
- **Modeling approaches**, including novel representations of governing physics, chemistry modeling, physics-based modeling, reduced-order and reduced-fidelity approaches, and data-driven approaches
- **Numerical techniques**, including computational representation of governing equations, deterministic and stochastic approaches, uncertainty quantification, data reduction, and machine intelligence for acceleration of simulations
- **Enabling concepts**, including plasma-aided systems, chemical looping, carbon capture, fuel synthesis, and hydrogen production

Applications

The topics within this group are multiscale, multiphysics in nature, and will involve the geometric aspects relevant to a particular application:

- **Energy and material conversion and heating processes**, including topics related to practical systems for power generation, synthesis of functional materials, metal combustion, and industrial furnaces
- **Low-speed propulsion**, pertaining to the applications of combustion-based engines for subsonic propulsion, such as internal combustion engines, gas turbines for aircrafts, reciprocating engines, and fuel cells
- **High-speed propulsion and energetics**, pertaining to supersonic or hypersonic propulsion, including scramjets, detonation engines, rockets, as well as energetic material
- **Fire and safety**, including wildfires, industrial fire, and topics on the safety of combustion and other energy systems, including battery fire safety

Author Instructions

Complete instructions for authors, including templates and requirements will be made available via **The Combustion Institute** and **ISOC** websites. The format and length of submissions for the Symposium will be different than those submitted for consideration in *PROCI*. When submitting to the Symposium, authors will select a primary colloquium, but can select up to two additional colloquia that are relevant. Authors will be asked to indicate whether they prefer oral or poster presentation formats.

- Poster presentations will last ~90-120 minutes, allowing for significant interaction between presenters and attendees. This format favors papers that will benefit from one-to-one interactions and targeted discussions.
- Oral presentations are organized in concurrent parallel sessions in rooms throughout the venue. Authors will have ~20 minutes to present, address questions, and switch to the next talk.
- Regardless of presentation mode, all authors will be required to upload a short video recorded presentation online before the conference, to be made available to all attendees along with the short paper. Authors may upload supplementary material at this stage.
- While the organizing team will do their best to adhere to author preferences, we may make some changes to a fraction of the papers in order to balance oral and poster presentations.

By submitting a paper for Symposium consideration, the author has committed to present in person if accepted for presentation.



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Paper Submission and Processing

The Combustion Institute and the Program Co-Chairs (PCCs) are committed to a fair and honest evaluation of the submitted manuscripts. Each submission will be assigned to a colloquium, and evaluated by two Colloquium Co-Chairs (CCCs). When a submission does not naturally fit in a single colloquium, CCCs from multiple colloquia may be assigned (limited to two). Authors will indicate their preferred presentation format, oral or poster. Their choice will be considered by the PCCs and evaluation teams when determining presentation formats, but will not affect their selection chances. Final presentation decisions are made by the PCCs with the input from Colloquium Leads and Co-Chairs. All decisions are final and based upon suitability and applicability to the Symposium themes.

To maintain and/or improve the high quality of presentations at the Symposium, authors will be asked to submit original work that has not been previously or concurrently considered for peer-reviewed journal publication.

Submissions will follow a two-step process. Links to submission portals to be provided.

1. Submission and evaluation for ISOC: In anticipation of a larger number of submissions and presentations, authors will submit a four-page paper (format and content discussed in forthcoming Guide and Instructions for Authors). An ISOC colloquia team will evaluate these submissions to determine their suitability for presentation at the Symposium. If selected, the presentation format (poster or oral) will be determined by the organizers, with consideration of author preference. All selected authors are required to confirm their participation to secure their slot at the conference.
2. Submission to *PROCI*: Authors, whose papers are selected in the first stage, will be invited to submit full-length papers (format and content discussed in forthcoming Guide and Instructions for Authors). The *PROCI* editors will handle these papers subject to the journal guidelines, which will include peer review, editorial evaluation, author responses, and accommodation for changes to the content of the paper. There will be no distinction in the *PROCI* publication between papers selected for poster or oral presentation for the Symposium.

The four-page paper submitted to ISOC should represent completed research and is not an abstract of intended research. We note that full length papers are not mandatory for presentation at the Symposium, but are highly recommended. Further, only full-length *PROCI* papers will be considered for the Distinguished Paper Award (DPA), which are based on individual colloquia, and for the Silver Medal of The Combustion Institute, which is selected from the papers that received DPAs.

Deadlines and Important Dates

ISOC portal for 4-page paper submissions opens - **1 October 2025**

Deadline for ISOC 4-page paper submissions - **12 November 2025**

Decisions on acceptance to ISOC - **1 February 2026**

Decisions on format of presentation - **15 February 2026**

Deadline for submission of full-length papers to *PROCI* - **15 March 2026**

WiPP submissions portal opens - **16 March 2026 through 1 May 2026**

WiPP notifications - **15 May 2026**

Deadline for uploading short presentations and other supplementary material - **1 July 2026**

Additional information can be found at <https://www.combustionsymposia.org/>.

Questions should be directed to office@combustioninstitute.org.



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