Call for Participation in the MaCFP-4 Workshop

June 6-7, 2026 - La Rochelle, France

MaCFP

The general objective of the "IAFSS Working Group on Measurement and Computation of Fire Phenomena" (abbreviated as the "MaCFP Working Group") is to establish a structured effort in the fire research community to make significant and systematic progress in fire modeling, based on a fundamental understanding of fire phenomena. This is to be achieved as a joint effort between experimentalists and modelers, identifying key research topics of interest as well as knowledge gaps, and thereby establishing a common framework for fire modeling research. The MaCFP Working Group is intended as an open, community-wide, international collaboration between fire scientists. It is also intended to be a regular series of workshops. Information on previous MaCFP workshops (held in 2017, 2021 and 2023) can be found on the MaCFP website (https://iafss.org/macfp/) and the MaCFP GitHub repository (https://github.com/MaCFP).

MaCFP-4

The fourth MaCFP workshop, called "MaCFP-4", will take place on June 6-7, 2026, as an (in-person) pre-event to the 15th IAFSS Symposium (https://www.iafss2026.com) in La Rochelle, France. The workshop will feature activities organized by the Gas Phase Phenomena subgroup, the Condensed Phase Phenomena subgroup, and the Radiative Heat Transfer Phenomena subgroup. This call for participation provides a summary of target cases to be discussed at MaCFP-4 and a schedule of the events leading up to the Workshop (including virtual meetings).

Target cases are for the most part target experiments; target cases can also be occasionally reference simulations. The format of the workshop will consist in presentations of both the target cases selected for fire model validation and detailed comparisons of target data and computational results obtained by different fire modeling groups. While the workshop topic is of direct interest to experimental and computational fire researchers, the workshop is also of broad interest to the fire research community at large. Interested individuals can participate in MaCFP-4 by attending the workshop; interested modeler and modeling groups can also participate by contributing computational results for comparisons with target data. Guidance on how to contribute computational results and expected comparisons will soon be provided. One should check the MaCFP website (https://iafss.org/macfp/) and the MaCFP GitHub repository (https://github.com/MaCFP) for regular updates.

Target Cases

Radiative Heat Transfer Phenomena subgroup

- Sensitivity studies for radiation solvers used in fire models. Sensitivity studies using a 30-cm methanol pool flame (HRR = 19.2 kW) and a 13.7-cm ethylene diffusion flame (HRR = 15 kW) as targets. Guidance for new participants will be provided in an online meeting, Friday December 5 (contact Fabian Brännström, braennstroem@uni-wuppertal.de, to get an invitation).

- Prediction of radiation fields in benchmark combustion systems. Predictions made by the radiation solvers of fire CFD codes will be compared against experimental heat fluxes and synthetic data (net source term, emission, absorption) obtained from Particle Monte Carlo - Line-by-line (PMC-LBL) calculations of a 30-cm methanol pool flame (HRR = 19.2 kW) and a 13.7-cm ethylene diffusion flame (HRR = 15 kW).
- Characterization of absorption and emissivity of a charring material. The Radiative Heat Transfer Phenomena subgroup will help coordinate the Condensed Phase Phenomena subgroup's pyrolysis model calibration exercise.

Condensed Phase Phenomena subgroup

- Pyrolysis model calibration of a charring material: pine wood. No single approach is suggested for model parameterization. In fact, a key objective of this material property determination exercise is to catalog current approaches used to parameterize complex pyrolysis models.

  Experimentalists are asked to perform tests and share their measurement data to be made publicly available on the MaCFP GitHub repository (https://github.com/MaCFP/matl-db/tree/master/Wood).

  Modelers are asked to calibrate material property sets using this data and perform simulations of material response to heating (0D thermal decomposition and 1D gasification).

  Limited quantities of the test material have been made available directly to participants who have committed to conducting experiments. To date, more than 20 institutions across 12 countries have requested samples to participate in the experimental component of this exercise.

  MaCFP-4 pyrolysis modeling targets will include only anaerobic conditions; however, participants are encouraged to develop experimental datasets and corresponding models that will describe oxidation (as will be studied in detail at MaCFP-5).

Gas Phase Phenomena subgroup

- FM Burner. Controlled co-flow round diffusion flame experiments (13.7-cm diameter diffusion flames featuring different fuels and an oxygen-nitrogen oxidizer). Study of soot formation/oxidation and thermal radiation emissions in turbulent buoyant diffusion flames using a burner configuration developed at FM and data also generated at FM. See the FM Burner folder (https://github.com/MaCFP/macfp-db/tree/master/Extinction/FM_Burner) on the MaCFP GitHub repository.
- Upward flame spread. Study of flame structure/heat flux and fire growth over PMMA. Two configurations are considered:
  - A parallel panel configuration based on the FM 4910 fire test and studied at the National Institute of Standards and Technology: flame spread experiments in a parallel panel configuration, with PMMA. See the parallel panel fire folder (https://github.com/MaCFP/macfp-db/tree/master/Fire_Growth/NIST_Parallel_Panel) on the MaCFP GitHub repository.
  - A corner wall configuration based on the EN 13823 Single Burning Item (SBI) fire test and studied at the University of Maryland: flame spread experiments in a corner wall configuration, with PMMA. See the corner wall fire folder (https://github.com/MaCFP/macfp-db/tree/master/Fire_Growth/UMD_SBI) on the MaCFP GitHub repository.
- Compartment/façade fires. 1-MW-scale compartment fires producing external flames and spill plumes over a vertical non-combustible façade. Study of flame structure and heat transfer using a configuration based on the JIS A 1310 fire test and data generated at the Building Research Institute of Japan and the University of Tokyo. See the façade fire folder (https://github.com/MaCFP/macfp-db/tree/master/Wall_Fires/JIS_Facade) on the MaCFP GitHub repository.

Workshop Timeline (Tentative)

Date	Objective
Dec. 5, 2025	Online meeting of the Radiative Heat Transfer Phenomena subgroup
January 2026	Call for volunteers [repo management, data analysis, scripting, etc.] **Virtual Meeting ("MaCFP-3.5")** Coordinated by Condensed Phase Phenomena subgroup, all participants welcome Summary of experimental data submitted to pyrolysis model calibration exercise Call for participation (modelers) in pyrolysis model calibration exercise
February 2026	Share final version of "Guidelines for Participation in MaCFP-4" document Deadline to submit revisions to experimental datasets (pyrolysis model calibration)
May 2026	Deadline to submit fire modeling results (Gas Phase Phenomena subgroup, all cases) Deadline to submit pyrolysis model calibration results (Condensed Phase Phenomena subgroup) Deadline to submit radiation modeling results (Radiative Heat Transfer Phenomena subgroup) Poster abstract deadline (MaCFP-4 experimental data and modeling submissions)
June 6-7, 2026	**MaCFP-4 Workshop: La Rochelle, France**

Points of contact

Gas Phase Phenomena subgroup

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Radiation Phenomena subgroup

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