Special Issue

Advances in Combustion Science: Thermochemical Reactions, Heat Transfer, and Ignition Dynamics

Message from the Guest Editor

Combustion processes play a significant role in various natural and engineered systems, influencing fire behavior, energy generation, and environmental sustainability. From the ignition of individual fuel particles to large-scale fire dynamics, understanding the physics and chemistry of combustion is essential for improving fire prediction, control strategies, and hazard assessment. This Special Issue aims to present the newest technology research in applied combustion physics and chemistry, including calorimetry, thermochemical reactions, energy distribution, heat transfer, and ignition mechanisms. Contributions focusing on material sciences and engineering approaches to combustion properties are also encouraged. Topics of interest include, but are not limited to:

- Combustion dynamics at multiple scales;
- Thermochemical reactions and energy distribution in fire environments;
- Heat transfer and ignition mechanisms in different materials;
- Advances in fire modeling and simulations;
- Impacts of biomass combustion on air quality and climate;
- Engineering approaches to combustion science and fire mitigation;
- The role of hydrology and vegetation in fire spread and intensity.

Guest Editor

Dr. Adina Magdalena Musuc
Department of Chemical Kinetics, "Ilie Murgulescu" Institute of Physical Chemistry, Romanian Academy, 060021 Bucharest, Romania

Deadline for manuscript submissions

31 March 2026

Fire

an Open Access Journal by MDPI

Impact Factor 2.7
CiteScore 3.9

mdpi.com/si/231286

Fire
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
fire@mdpi.com

mdpi.com/journal/fire

Fire

an Open Access Journal by MDPI

Impact Factor 2.7
CiteScore 3.9

mdpi.com/journal/fire

About the Journal

Message from the Editor-in-Chief

Fire is an international open-access journal about the science, policy, and technology of fires and how they interact with communities and the environment. *Fire* seeks to provide a forum to help the fire science community convey how we can live with fire in a changing world. *Fire* seeks submissions from interdisciplinary studies that take a pyrogeography perspective of fires occurring in natural, cultural, and industrial landscapes and how they interact with communities in the science-policy interface. *Fire*'s Editorial Board are widely recognized international leaders. The journal emphasizes quality and innovation and has a rigorous peer-review process. I strongly recommend *Fire* for the rapid publication of your innovative research publications and case studies.

Editor-in-Chief

Dr. Grant Williamson
School of Biological Sciences, University of Tasmania, Private Bag 55, Hobart, TAS 7001, Australia

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), AGRIS, PubAg, and other databases.

Journal Rank:

JCR - Q1 (Forestry) / CiteScore - Q1 (Forestry)

MDPI