



an Open Access Journal by MDPI

Supersonic Combustion: Latest Advances and Prospects

Guest Editors:

Dr. Zhiwei Huang

School of Aeronautics and
Astronautics, Shanghai Jiao Tong
University, Shanghai 200240,
China

Prof. Dr. Majie Zhao

School of Aerospace Engineering,
Beijing Institute of Technology,
Beijing 100081, China

Deadline for manuscript
submissions:

closed (31 December 2024)

Message from the Guest Editors

Dear Colleagues,

Great efforts have been dedicated to the fundamental research and engineering development of hypersonic flight vehicles. Supersonic combustion is a central physical process that enables hypersonic propulsion systems flying several times faster than the sound of speed. Supersonic combustion is prominently featured with high flowing speed (thousands of meters per second) and short residence time (of the order of milliseconds). Fuel injection, primary atomization, secondary breakup, droplet dispersion and evaporation, vapor mixing, ignition, flame propagation, and stabilization are great challenges associated with robust and efficient combustion organization in supersonic or hypersonic flows.

Subjects that will be discussed in this Issue include the above-mentioned non-linear, multi-scale, and high-coupling physical-chemical processes, but also the flight demonstrations, ground-based experiments, high-fidelity simulations, and elaborated theoretical analyses relevant to supersonic combustion. Submissions associated with high-speed flows, like shock and drag reduction, cooling, and thermal protection for either internal or external walls, are also welcome.



mdpi.com/si/195049

Special Issue



an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo
Dipartimento di Fisica,
Politecnico di Milano, Piazza L.
da Vinci 32, 20133 Milano, Italy

Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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), Ei Compendex, Inspec, Embase, CAPlus / SciFinder, and other databases.

Journal Rank: JCR - Q2 (Engineering, Multidisciplinary) / CiteScore - Q1 (General Engineering)

Contact Us

Applied Sciences Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/applsci
appls@mdpi.com
[X@Appls](https://twitter.com/appls)