

Special Issue on **Mathematical and Numerical Applications in Combustion Engines 2023**

CALL FOR PAPERS

Combustion engines (CE) are essential in many different engineering sectors and have long been the topic of extensive research. As a result of these investigations, CE systems have been transformed into highly efficient power units with small footprints. CE efficiency has improved as a result of various engineering designs, such as in-cylinder, after-treatment, and supplemental applications. CE components, particularly in heavy-duty vehicles, continue to play an essential role in the power unit.

Many academics in universities, research institutes, and industry are currently developing new CE components and attempting to address the engineering frameworks and background control of these systems. However, more detailed research is still needed, particularly in the structure of CEs and after-treatment designs, in terms of emissions and engine performance. These difficulties attract the interest of many academics who wish to develop novel engineering methodologies and compact applications within the CE framework. The development of internal combustion engine (ICE) systems is aided by detailed investigations, mathematical techniques, numerical modeling, and optimization. As a result, the development of CEs continues to provide challenges to researchers from a wide range of engineering fields.

This Special Issue aims to assist researchers and academics in developing novel mathematical techniques, numerical simulations, and breakthrough CE technologies. We seek to bring academia and industry together on a unique path to learn and share information about CE applications. We welcome both original research and review papers.

Potential topics include but are not limited to the following:

- ▶ After-treatment systems
- ▶ Numerical and mathematical modeling in CEs
- ▶ Mathematical approaches and modeling for in-cylinder turbulent flow
- ▶ Combustion modeling
- ▶ Future perspectives for CEs
- ▶ Applications of computational fluid dynamics
- ▶ Minimum oil film thickness analysis
- ▶ Cooling calculations
- ▶ Lubricating system modeling
- ▶ Effects of nanoparticles on CE performance
- ▶ Optimization applications

Authors can submit their manuscripts through the Manuscript Tracking System at <https://review.wiley.com/submit?specialIssue=616505>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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