Special Issue

Computational Fluid Dynamics for Turbulent Combustion

Message from the Guest Editors

Modeling the interaction of turbulence with chemical reactions is one of the classic problems of computational fluid dynamics. The main driver for the investigation of this subject is the development of more efficient and cleaner combustion technologies. The major difficulties in this effort are posed by the strong coupling that develops between turbulence and combustion and that may lead to augmentation or the extinction of the combustion processes and the modification of the turbulent flow properties because of gas expansion, temperature increase, buoyancy, etc. The prohibitive computational cost of direct calculations often forestalls the numerical investigation of the reacting flows even in very simplified configurations. At the same time, the multiscale nature of the involved phenomena and the large range of regimes encountered in laboratory flames and industrial burners increases the complexity of devising models that require minimal prior knowledge of the flow that needs to be investigated.

Guest Editors

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Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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