Special Issue

Advanced Combustion Technologies: Challenges and Solutions for a Low-Carbon Future

Message from the Guest Editors

Advancements in combustion science and a deeper understanding of renewable energy sources are essential for successful energy transition and sustainable mobility. The main aim of this Special Issue is to report novel results that deal with the application of net-zero emission and carbon-neutral combustion technologies, involving the utilization of sustainable fuels. This Special Issue showcases recent research on experimental studies, innovative diagnostic techniques, chemical kinetics of alternative fuels, computational fluid dynamics modeling of advanced combustion technologies, pollutant formation and mechanisms, renewable energy carriers like hydrogen and ammonia, data-driven methods for combustion and material synthesis, applications in engines and propulsion systems, biomass thermochemical processing and recycling, spray atomization, and liquid/solid fuel combustion. Keywords:

- low emissions
- advanced combustion
- fuel flexibility
- MILD combustion
- combustion modeling
- biomass combustion
- thermochemical conversion
- formation mechanisms
- kinetic modeling
- measurement techniques
- emission reduction

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Message from the Editor-in-Chief

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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