

Special Issue

Recent Studies on Flow, Atomization, and Combustion in Swirl Combustors

Message from the Guest Editors

Swirling flows have been extensively used to stabilize flames in various combustion devices. The main effects of swirl are an improvement in flame stability as a result of the formation of toroidal recirculation zones and a reduction in flame lengths resulting from the production of high rates of entrainment of the ambient fluid and from fast mixing. However, our understanding of these swirling flows is still far from sufficient because of their complexity, especially in swirl spray combustion processes. This Special Issue aims to present and disseminate the most recent advances and prospects related to the theory, experimentation, simulation and application of all types of swirl combustion techniques as well as the associated issues on flows, atomization and alternative fuels. Both research and review articles are welcome. Topics of interest for publication include, but are not limited to the following:

- Optical diagnostics in swirl flames;
- Numerical simulations of swirl flames;
- Swirling flows;
- The use of renewable/alternative fuels in swirl combustion;
- Swirl flame dynamics;
- Swirl flame stabilization.

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