

# Special Issue

## Combustion Flow in Scramjet

### Message from the Guest Editors

Hypersonic vehicles, known as the third revolutionary achievement in aviation history after the propeller and turbojet aircrafts, constitute the strategic development direction of future military and civil aviation spacecraft. Scramjet is the preferred propulsion device for hypersonic vehicles. Through the continuous research of scramjet technology conducted by various countries, the speed of hypersonic vehicles has been constantly increasing, and the flight speed of the state-of-the-art X-43 vehicle has reached Ma 9.8. Hypersonic cruise technology has made significant breakthroughs. In order to further apply scramjet to round-trip transportation systems, researchers in various countries have continuously widened its working speed range: The lower Mach number of scramjet strives to break through the lower limit to Mach 2.0-2.5, and the higher Mach number of scramjet strives to break through the upper limit to Mach 12.0-15.0. As a result, a series of key scientific problems have arisen, and it is urgent to continue to make breakthroughs in fuel/air mixing, ignition, materials, structure, control, artificial intelligence, and thermal protection technologies in scramjet.

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