

SPACE PROPULSION SYMPOSIUM (C4)
Hypersonic Air-breathing and Combined Cycle Propulsion (9)

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DEVELOPMENT OF OPTICAL DIAGNOSTICS FOR THE CHARACTERIZATION OF
HIGH-VELOCITY COMBUSTION

Abstract

This work looks at the use of optical diagnostics to understand the combustion in hypersonic and other high-speed flows. It is becoming increasingly important to have an accurate understanding of the major characteristics of combustion in high-velocity flows in order to develop accurate models and improve the simulations that are used in design and development of new technologies. By utilizing existing techniques, new diagnostics tools have been developed to measure the concentrations of major species time-histories and the temperature of the fluid throughout the combustion process.