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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Theoretical background -- High-temperature gas dynamics and hypersonic effects -- Cycle analyses and energy management -- Inlets and nozzles -- Supersonic combustion processes -- Testing methods and wind tunnels -- Computational fluid dynamic methods and solutions for high-speed reacting flows.
Sommario/riassunto	The renewed interest in high-speed propulsion has led to increased activity in the development of the supersonic combustion ramjet engine for hypersonic flight applications. In the hypersonic regime the scramjet engine's specific thrust exceeds that of other propulsion systems. This book, written by a leading researcher, describes the processes and characteristics of the scramjet engine in a unified manner, reviewing both theoretical and experimental research. The

focus is on the phenomena that dictate the thermo-aerodynamic processes encountered in the scramjet engine, including component analyses and flowpath considerations; fundamental theoretical topics related to internal flow with chemical reactions and non-equilibrium effects, high-temperature gas dynamics, and hypersonic effects are included. Cycle and component analyses are further described, followed by flowpath examination. Finally, the book reviews experimental and theoretical capabilities and describes ground testing facilities and computational fluid dynamics facilities developed for the study of time-accurate, high-temperature aerodynamics.