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Nota di contenuto	Part I General -- Introduction to Horizons in Internal Combustion Research -- Part II Advanced Technology for Internal Combustion Engines -- Low Temperature Combustion: An Advanced Technology for Internal Combustion Engines -- Characterization of Ringing Operation in Ethanol Fueled HCCI Engine using Chemical Kinetics and Artificial Neural Network -- Variable Valve Actuation Systems -- Performance, Combustion and Emissions Characteristics of Conventional Diesel Engine Using Butanol Blends -- Hydrogen Enriched Compressed Natural Gas: An Alternate Fuel for IC Engines -- Characterization of Cycle to Cycle Variations in Conventional Diesel Engine Using Wavelets -- Part III Exhaust After-treatment and its Heat Recovery -- Recent Advancements in After-treatment Technology for Internal Combustion Engines: An Overview -- Calcium Oxide Nanoparticles as an Effective Filtration Aid for Purification of Vehicle Gas Exhaust -- Exhaust Heat Recovery using Thermoelectric Generators: A Review -- Part IV Numerical/ Simulation -- Chemical Kinetic Simulation of Syngas Fueled

HCCI Engine -- Gasoline Compression Ignition – A Simulation-Based Perspective -- Application of C.F.D. for Analysis and Design of I.C. Engines -- Part V Next Step for Indian Automotive Industry -- Future Mobility Solutions of Indian Automotive Industry: BS-VI, Hybrid and Electric Vehicles.

Sommario/riassunto

This book discusses all aspects of advanced engine technologies, and describes the role of alternative fuels and solution-based modeling studies in meeting the increasingly higher standards of the automotive industry. By promoting research into more efficient and environment-friendly combustion technologies, it helps enable researchers to develop higher-power engines with lower fuel consumption, emissions, and noise levels. Over the course of 12 chapters, it covers research in areas such as homogeneous charge compression ignition (HCCI) combustion and control strategies, the use of alternative fuels and additives in combination with new combustion technology and novel approaches to recover the pumping loss in the spark ignition engine. The book will serve as a valuable resource for academic researchers and professional automotive engineers alike.