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Soggetti	Energy policy Energy and state Thermodynamics Heat engineering Heat transfer Mass transfer Cogeneration of electric power and heat Fossil fuels Energy Policy, Economics and Management Engineering Thermodynamics, Heat and Mass Transfer Fossil Fuel
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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Part I: General.- Introduction.- Technical challenges and scientific approach for a sustainable energy efficient future -- Part II: Biofuels: Production, properties and applications.- Biofuels from biomass. - Biomass fuel quality enhancement and the respiratory quotient (RQ) for ranking fossil and biomass fuels based on CO2 emissions.- Effect of biodiesel utilization on tribological properties of lubricating oil in a compression ignition engine.- Hydrogen enriched syngas from biomass

steam gasification for use in land based gas turbine engines -- Part III: Combustion of fuels and engine performance.- Future trends in commercial aviation engines' combustion.- Spectroscopic methods and visualization applied to combustion diagnoses.- Lean blow-out detection techniques for partially premixed flames in a dump combustor.- Fluidized bed combustion of coal, renewable fuels and waste: Current Status and Developments.- Using petroleum and biomass derived fuels in duel-fuel diesel engines.- Mixture preparation effects on distributed combustion for gas turbine application.- Flame characteristics of vaporized renewable fuels and their blends with petroleum fuels -- Process and reactor level simulations of coal-direct chemical looping combustion.- Acoustic reynolds stress: the source of coherent structures during combustion instability.- Developing surrogates for liquid transportation fuels: the role of spherically symmetric droplet combustion -- Part IV: Emissions.- Urban traffic emissions and associated environmental impacts in India.- Comparison of primary and secondary emissions from an internal combustion engine.- Emissions and soot in partially premixed combustion.-Low-emission, fuel-flexible combustion of liquid fuels.- PART V: Sustainable energy systems and efficiency improvements.- In-depth performance evaluation of RDF from landfill reclamation for green electricity generation in a downdraftgasifier.- ceramics for sustainable energy technologies with a focus on polymer derived ceramics.- Solid fuel rocket motor efficiency improvement scheme.

Sommario/riassunto

This book comprises research studies of novel work on combustion for sustainable energy development. It offers an insight into a few viable novel technologies for improved, efficient and sustainable utilization of combustion-based energy production using both fossil and bio fuels. Special emphasis is placed on micro-scale combustion systems that offer new challenges and opportunities. The book is divided into five sections, with chapters from 3-4 leading experts forming the core of each section. The book should prove useful to a variety of readers, including students, researchers, and professionals.