Cleaner Combustion

Contributed by Administrator
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Cleaner Combustion: Cleaner Combustion Developing Detailed Chemical Kinetic Models ISBN 978-1-4471-5307-8Springer Book
Focuses on the theory and computation of elementary reactions to match and accurately represent the chemical complexity of modern fuels
Explores chemical kinetic modeling of combustion to provide an essential tool in understanding current fuels and engine systems
Written by experienced researchers in the field of chemical kinetics of combustion to ensure detailed an accurate explanations of methods, concepts and approaches

This overview compiles the on-going research in Europe to enlarge and deepen the understanding of the reaction mechanisms and pathways associated with the combustion of an increased range of fuels. Focus is given to the formation of a large number of hazardous minor pollutants and the inability of current combustion models to predict the formation of minor products such as alkenes, dienes, aromatics, aldehydes and soot nano-particles which have a deleterious impact on both the environment and on human health. Cleaner Combustiondescribes, at a fundamental level, the reactive chemistry of minor pollutants within extensively validated detailed mechanisms for traditional fuels, but also innovative surrogates, describing the complex chemistry of new environmentally important bio-fuels.

Divided into five sections, a broad yet detailed coverage of related research is provided. Beginning with the development of detailed kinetic mechanisms, chapters go on to explore techniques to obtain reliable experimental data, soot and polycyclic aromatic hydrocarbons, mechanism reduction and uncertainty analysis, and elementary reactions.

Chapters Edward S. Blurock is inolved in also:

Introduction
Battin-Leclerc, Frédérique; Blurock, Edward S.; Simmie, John M. Show all authors (6)
Modeling Combustion with Detailed Kinetic Mechanisms
Blurock, Edward; Battin-Leclerc, Frédérique
Automatic Generation of Detailed Mechanisms
Blurock, Edward; Battin-Leclerc, Frédérique; Faravelli, Tiziano Show all authors (4)