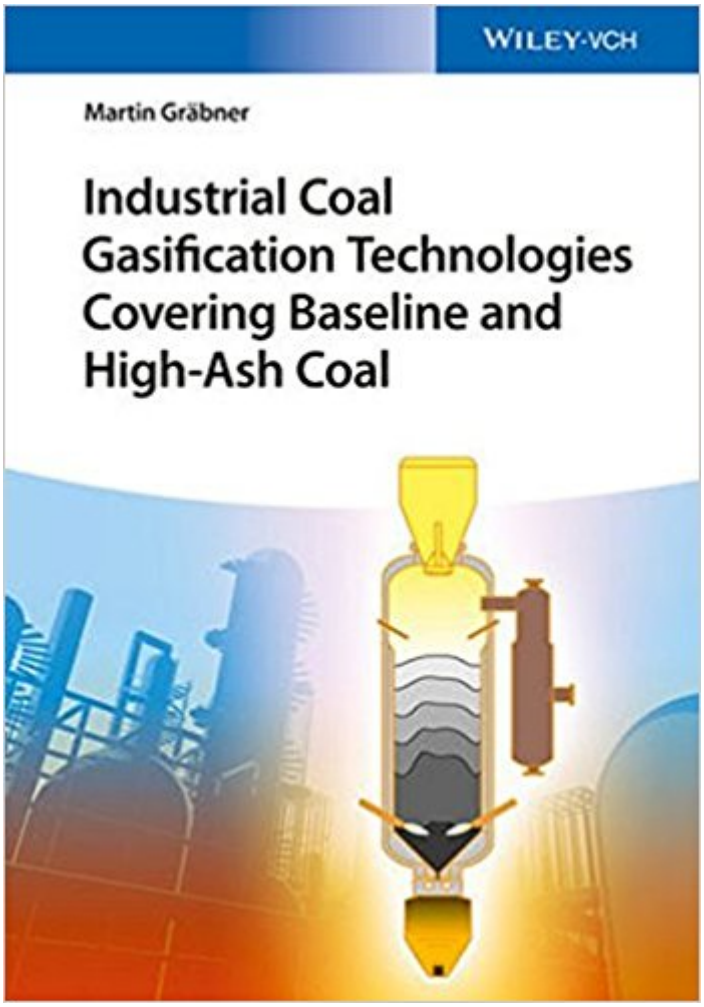
Industrial Coal Gasification Technologies Covering Baseline And High-Ash Coal



Synopsis

The ongoing discussion about reaching the "peak-oil point" (maximal delivery rate with conventional methods) emphasizes a fundamental change of the frame conditions of oil-based basic products. The alternative with the largest potential is the use of coal. Coal gasification is the production of coal gas (a mixture of mainly hydrogen and carbon monoxide) from coal adding agents like steam/water and oxygen, which can be used in a number of industrial processes (e.g. hydroformulation and Fischer-Tropsch process). Many different kinds of coal do naturally occur, and due to shrinking natural resources, there has been a substantial gain of interest in poor, ash-rich coal. Beside the quality of coal, there is a number of other parameters influencing the efficiency of coal gasification, such as temperature, pressure, and reactor type. Although several books dealing with the subject of gasification have recently been published, few are strictly focussed on coal as feedstock. This monograph provides the reader with the necessary chemical background on coal gasification. Several types of coal (baseline coal and ash-rich coal) are compared systematically, pointing out the technological efforts achieved so far to overcome this challenge. Using a new, innovative order scheme to evaluate the gasification process at a glance (the ternary diagram), the complex network of chemistry, engineering, and economic needs can be overviewed in a highly efficient way. This book is a must-have for Chemical and Process Engineers, Engineering Students, as well as Scientists in the Chemical Industry.

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