1. Record Nr. UNINA9910817867203321 Autore **Higman Chris Titolo** Gasification / / Christopher Higman and Maarten van der Burgt Amsterdam; ; Boston, : Gulf Professional Pub./Elsevier Science, 2008 Pubbl/distr/stampa **ISBN** 1-281-18956-1 9786611189563 0-08-056090-3 Edizione [2nd ed.] Descrizione fisica 1 online resource (452 p.) Altri autori (Persone) BurgtMaarten van der Disciplina 665.7/72 Soggetti Coal gasification Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Cover; Contents; Notes on the authors; Preface to second edition; Preface to first edition; Chapter 1 Introduction; 1.1 Historical development of gasification; 1.2 Gasification today; References; Chapter 2 The thermodynamics of gasification; 2.1 Reactions; 2.2 Thermodynamic modeling of gasification; 2.3 Deductions from the thermodynamic model; 2.4 Optimizing process conditions; References; Chapter 3 The kinetics of gasification and reactor theory; 3.1 Kinetics; 3.2 Reactor theory; 3.3 Applications to reactor design; References; Chapter 4 Feedstocks and feedstock characteristics 4.1 Coals and coke 4.2 Liquid and gaseous feedstocks; 4.3 Biomass; 4.4 Wastes: References: Chapter 5 Gasification processes: 5.1 Movingbed processes; 5.2 Fluid-bed processes; 5.3 Entrained-flow processes; 5.4 Oil gasification and partial oxidation of natural gas; 5.5 Biomass gasification; 5.6 Gasification of wastes; 5.7 Black liquor gasification; 5.8 Miscellaneous gasification processes; References; Chapter 6 Practical issues; 6.1 Effect of pressure; 6.2 Pressurization of coal; 6.3 Coal sizing and drying; 6.4 Reactor design; 6.5 Burners; 6.6 Synthesis gas cooling; 6.7 Particulate removal 6.8 Process measurement 6.9 Trace components in raw synthesis gas; 6.10 Choice of oxidant; 6.11 Corrosion aspects; References; Chapter 7 Applications; 7.1 Chemicals; 7.2 Synfuels; 7.3 Power; References; Chapter 8 Auxiliary technologies; 8.1 Oxygen supply; 8.2 Synthesis gas

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## Sommario/riassunto

Gasification is a process that if properly utilized can transform the world in which we live. Comprehensive in its coverage, this second edition continues the tradition of the first by providing engineers and scientists with an up-to-date overview of commercial processes and applications relevant to today's demands. Gasification, 2nd edition is expanded and provides more detail on the integration issues for current generation, state-of-the-art Integrated Gasification Combined Cycles (IGCC); CO2 capture in the IGCC context addressing the issues of pre-investment and retrofitting as well as def