1. Record Nr. UNINA9910299607903321

Autore	Basu Prabir <1946->
Titolo	Circulating Fluidized Bed Boilers : Design, Operation and Maintenance / / by Prabir Basu
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
ISBN	3-319-06173-9
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (370 p.)
Disciplina	621.042
Soggetti	Renewable energy resources Renewable and Green Energy
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 at the end of each chapters.
Nota di contenuto	Introduction -- Hydrodynamics -- Heat Transfer -- Combustion -- Emission -- Design Considerations -- Gas-Solid Separators -- Solid Recycle Devices -- Solid Waste Issues -- Material Issues -- Operating and Maintenance Issues.
Sommario/riassunto	· Explains operation and scientific fundamentals of circulating fluidized bed (CFB) boilers · Outlines practical issues in industrial use · Teaches how to optimize design for maximum reliability and efficiency · Discusses operating and maintenance issues and how to troubleshoot them This book provides practicing engineers and students with insight into the design and operation of circulating fluidized bed boilers through a combination of theoretical concepts and practical instruction. Numerous examples from actual operating plants illustrate key concepts in combustion, hydrodynamics, heat transfer, and materials. The relevance of feed-stock parameters to the operation of CFB boilers is examined, including impacts on the design of mechanical components, such as cyclones, air distributor grids, and solid recycle systems. This versatile resource explains how CFB boilers work, and how the basic principles of thermodynamics and fluid mechanics influence design, while providing advice on planning new projects, troubleshooting existing equipment, and appreciating the capabilities and limitations of the process. From hydrodynamics to construction and maintenance, the author covers all the essential

information needed to understand, design, operate, and maintain a complete fluidized bed system. Understanding how to leverage this technology is a must for clean coal operations as well as for biomass power generation.