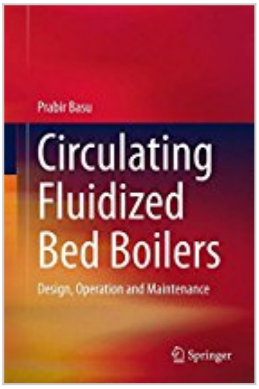

Circulating Fluidized Bed Boilers: Design, Operation and Maintenance

By Prabir Basu

Circulating Fluidized Bed Boilers: Design, Operation and Maintenance By Prabir Basu

· 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 (CFB) boilers through a combination of theoretical concepts and practical experience. An emphasis on combustion, hydrodynamics, heat transfer, and material issues illustrates these concepts with numerous examples from actual operating plants. The relevance of design and feed-stock parameters to the operation of a CFB boiler are also examined, along with their impacts on designs of mechanical components, including cyclones, air distributor grids, and solid recycle systems. This versatile resource explains how fluidized bed equipment works and how the basic principles of thermodynamics and fluid mechanics influence design, while providing insight into 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 of the essential information needed to understand, design, operate, and maintain a complete fluidized bed system. It is a must for clean coal technology as well as for biomass power generation.

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Editorial Review

From the Back Cover

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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.

About the Author
Dr. Basu is an internationally recognized educator and specialist in Energy and Environment, with a 30-year long professional career in energy, the environment and power generation. His main interests lie in Biomass utilization and clean coal technology, particularly biomass torrefaction, gasification, Boiler Design, Fluidized Bed Combustion. Dr. Basu has been associated with the development of fluidized bed boilers in industry, government laboratories and universities since 1972. His research at TUNS and Dalhousie University on circulating fluidized bed has allowed him to consult for boiler and energy companies in Europe, Americas and Asia.

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