



Lignocellulose Biorefinery Engineering: Principles and Applications

By Hongzhang Chen

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Biomass resources and their refining are key research topics internationally as alternatives to fossil fuel resources and oil refining. This book explores the heterogeneous nature of lignocellulosic biomass, which restricts its use as a raw material, and describes the theoretical basis of the lignocellulose refinery. It puts forward the theory of the integrated biomass refinery system, which produces multiple products, including biofuels, biomaterials, biochemicals, food and feed based on careful fractionation of the raw material. Chapter 1 introduces the significance and development of lignocellulose biorefining. Chapter 2 gives the theoretical basis of lignocellulose biorefinery engineering. Chapters 3 to 6 describe in detail biomass refinery engineering from the perspectives of feedstocks, conversions, products and processes respectively. Models of integrated industrial biomass refinery chains are presented in Chapter 7. Finally, Chapter 8 considers future trends in lignocellulose biorefining.

- Explores mechanisms of selective fractionation of biomass based on biomass structural characteristics and product requirements
- Addresses biological, physical and chemical conversion technologies, as well as combinations of different methods based on the biomass material characteristics
- This thorough exploration of lignocellulose biorefining is written by an expert from a key research institute in this field

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Editorial Review

From the Back Cover

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About the Author

Hongzhang Chen is a professor at the State Key Laboratory of Biochemical Engineering, Institute of Process Engineering, Chinese Academy of Sciences.

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