

Lærebog
Bioprocessing – Converting biomass into sustainable products
Udgives af Cambridge University Press

Anmodning bistand til at udforme realistiske opgaver og cases til brug ved Undervisning

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Textbook -Læring:

- Give students a fundamental understanding of technologies and industrial processes for conversion and refining biomass into high value products.
- Bio-engineering, biology and agronomy will use the chapters about biomass, logistics, ethics and environment and economics.

Textbook

- ***Skills***

- Apply mass and energy balances to biomass processing and refining
- Perform chemical product design to biomass processing and refining
- Perform calculations on microbial and process kinetics
- Process optimization using system analysis and simulation
- Economic analysis

- ***Competences***

- Techno-economical analysis
- Assessment of sustainability – environmental and social

Chapter	Author	Affiliation
1. Introduction	Sven G. Sommer	Aarhus University
2. Biomass.	Sune Tjalfe Thomsen, Sven G. Sommer; Annette Bruhn, Xavier Fretter, Peter Daugbjerg Jensen.	University of Copenhagen Aarhus University Nature Energy Fredericia Spildevand
3. Sustainability and Ethics	Lone Søderkvist Sander Bruun Sven G. Sommer	University of Copenhagen Aarhus University
4. Conservation and Logistics	Søren Ugilt Larsen Sven G. Sommer	Danish Technological Institute Aarhus Universitet

Chapter	Author	Affiliation
5. Product design	Birgir Norddahl, Morten L. Christensen	University of Southern Denmark Aalborg University
6. Chemical processes, and modelling	Morten L. Christensen Birgir Norddahl,	Aalborg University University of Southern Denmark
7. Pre-treatment of biomass – Structural modification and preparation of biomass for further conversion and separation.	Morten Ambye-Jensen Sune Tjalfe Thomsen Ioannis V. Skiadas Hariklia N. Gavala	Aarhus University University of Copenhagen Technical University of Denmark
8. Separation processes and biomass fractionation.	Morten L. Christensen Morten Ambye-Nielsen	Aalborg University Aarhus University

Chapter	Author	Affiliation
9. Microbial conversion - Stoichiometry and kinetics of microbial processes	Maria Cinta Roda-Serrat Ioannis V. Skiadas Hariklia N. Gavala	University of Southern Denmark Technical University of Denmark
10. Thermal conversion	Konstantinos Anastasakis JJ Leahy	Aarhus University University of Limerick
11. System analysis and simulation.	Kathrine Bisgaard Christensen Morten L. Christensen	University College Absalon Aalborg University
12. Cost and market analysis.	Sven G. Sommer	Aarhus University
13. Industrial cases and emerging technologies	Kathrine Bisgaard Ioannis V. Skiadas & Hariklia N. Gavala	University College Absalon Technical University of Denmark

Cases som en gruppe Ingeniør studerende skal løse:

- Ny proceslinje
- Nye produkter
- Optimere eksisterende
- Rest biomateriale som kunne anvendes
- Etc.

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Hundertwasser toilet New Zealand

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