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2.2.1 Availability Assessment; 2.2.1.1 Energy Crop; 2.2.1.2 Biomass Cost; 2.2.2 Product Revenue from Biomass Conversion; 2.2.2.1 Energy Revenue; 2.2.2.2 Revenue from Chemicals; 2.2.2.3 Revenue from Secondary Fuel Production; 2.3 Biomass Conversion Process Plant Equipment and Cost; 2.3.1 Biomass Collection System; 2.3.2 Preprocessing; 2.3.3 Gasifier Cost; 2.3.4 Torrefier Cost; 2.3.5 Pyrolyzer Cost; 2.3.6 Comparison of Capital Costs; 2.4 Financial Analysis
2.4.1 Capital Cost Adjustment for Size and Time 2.4.1.1 Scale-Up with Size; 2.4.1.2 Scale-Up with Time; 2.4.2 Capital Requirement; 2.4.3 Operation and Maintenance Cost; 2.4.3.1 Carrying Charge; 2.4.3.2 Revenue Requirement; Symbols and Nomenclature; 3 Biomass Characteristics; 3.1 Introduction; 3.2 What Is Biomass?; 3.2.1 Biomass Formation; 3.2.2 Types of Biomass; 3.2.2.1 Lignocellulosic Biomass; 3.2.2.2 Crops and Vegetables; 3.2.2.3 Waste Biomass; 3.3 Structure of Biomass; 3.3.1 Structure of Wood; 3.3.2 Constituents of Biomass Cells; 3.3.2.1 Cellulose; 3.3.2.2 Hemicellulose; 3.3.2.3 Lignin
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3.6.2.2 Ash

Sommario/riassunto

Biomass is the most widely used non-fossil fuel in the world. Biomass resources show a considerable potential in the long-term given the increasing proliferation of dedicated energy crops for biofuels. The second edition of Biomass Gasification and Pyrolysis is enhanced with new topics, such as torrefaction and cofiring, making it a versatile resource that not only explains the basic principles of energy conversion systems, but also provides valuable insight into the design of biomass conversion systems. This book will allow professionals, such as engineers, scientists, and op

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Sommario/riassunto

This book is a collection of contributions presented at the 16th Conference on Acoustic and Vibration of Mechanical Structure held in Timioara, Romania, May 28, 2021. The conference focused on a broad range of topics related to acoustics and vibration, such as noise and vibration control, noise and vibration generation and propagation, effects of noise and vibration, condition monitoring and vibration testing, modelling, prediction and simulation of noise and vibration, environmental and occupational noise and vibration, noise and vibration attenuators, biomechanics and bioacoustics. The book also discusses analytical, numerical and experimental techniques applicable to analyze linear and non-linear noise and vibration problems (including strong nonlinearity) and it is primarily intended to emphasize the actual trends and state-of-the-art developments in the above mentioned topics. The primary audience of this book consist of academics, researchers and professionals, as well as PhD students concerned with various fields of acoustics and vibration of mechanical structures.