



# Production of Biofuels and Chemicals with Pyrolysis [

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Monografía

This book presents a collection of studies on state-of-art techniques for converting biomass to chemical products by means of pyrolysis, which are widely applicable to the valorization of biomass. In addition to discussing the fundamentals and mechanisms for producing bio-oils, chemicals, gases and biochar using pyrolysis, it outlines key reaction parameters and reactor configurations for various types of biomass. Written by leading experts and providing a broad range of perspectives on cutting-edge applications, the book is a comprehensive reference guide for academic researchers and industrial engineers in the fields of natural renewable materials, biorefinery of lignocellulose, biofuels, and environmental engineering, and a valuable resource for university students in the fields of chemical engineering, material science and environmental engineering

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**Contenido:** Introduction to pyrolysis as a thermochemical conversion technology -- Kinetic modelling of solid, liquid, and gas biofuel formation from biomass pyrolysis -- Production of Valuable Fuel Intermediates and Chemicals from Lignin via Fast Pyrolysis: Experimental and Theoretical Studies -- Pyrolysis chemistry and mechanism study - the interaction of main components -- Catalytic Upgrading of Bio-Oils into Aromatic Hydrocarbon over Highly Active Solid Catalysts -- Liquid biofuels production by catalytic pyrolysis of lignocellulosic biomass -- Advances in microwave-assisted pyrolysis of biomass -- From waste to chemicals: bio-oils production through microwave assisted pyrolysis -- Integrating biomass pyrolysis with microbial conversion processes to produce biofuels and biochemicals -- Levoglucosan production by fast pyrolysis of biomass after dilute acid pretreatment -- Production of phenols by lignocellulosic biomass pyrolysis -- Slow Pyrolysis and Hydrothermal Carbonization as Negative Emissions Technologies: A Review of Economic Costs and Carbon

Benefits -- Design of compression systems for pyrolysis gas -- Biomass pyrolysis modelling: Reaction kinetics, particle and reactor scale models.-.

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