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Nota di contenuto

Biowaste valorization: the wine industry case -- Recycling Biowaste and Residuals into Chemical Products -- Valorizing bio-waste and residuals -- Enzymes for Biomass Pretreatment: A Comprehensive Review -- Biosurfactants, polyhydroxyalkanoates and other added-value products from wastewater electro-bioremediation: a new biorefinery concept -- Sustainable approaches in viticulture: from wastes and side-streams to high-value products -- Valorization of agricultural residues to valuable products: a circular bioeconomy approach -- Agricultural Wastes to Value-Added Products: Economic and Environmental Perspectives for Waste Conversion -- Novel Approaches in Production and Application of Bacterial Cellulose in Food Industries -- Microbial Electrochemical Technologies: Sustainable solutions for addressing environmental challenges.

Sommario/riassunto

This book reviews the diversity of biowaste and the potential uses for bulk, fine and special chemicals. It describes technologies already established as well as those under development, and also focuses on economic and environmental sustainability. Expert contributions explore the key aspects of biorefineries, from biobased technologies, platform chemicals and pretreatment to special chemicals, biofuels, market dynamics, and ecological evaluation. Each chapter offers valuable insights and in-depth knowledge, ensuring that readers gain a comprehensive understanding of this evolving field. In this book, particular attention is given to the essential certifications and quality standards that ensure the sustainability and reliability of biomass-based chemicals. Readers will also find about topics such as: SynGas as a versatile platform chemical microbial electrochemical technologies valuable aromatics from lignin biogas as a renewable energy source the critical role of enzymes in the pretreatment process innovative biotechnological processes for sugar cane Life Cycle Assessment (LCA) methodologies and their application in evaluating the ecological impact of biorefineries. Given its breadth, this book is a valuable resource for academics, researchers, industry professionals, and policymakers working in the fields of agriculture, forestry, biomass processing, waste management and the chemical industry, interested in the development of new value chains from biowaste to chemical products.