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Nota di contenuto	History and Development of Lignin -- Sources of Lignin -- Lignin Extraction Using Cellulolytic Enzymes -- Determination of Lignin content -- Structural properties of Lignin -- Chromatographic methods for Lignin Characterization -- Thermal Characterizations of Lignin -- Morphological properties of Lignin -- Mechanical properties of Lignin -- Functionalization of Lignin by Phenolation -- Functionalization of Lignin by Methylation -- Oxidative Functionalization of Lignin -- Lignin in film formation -- Lignin as photocatalysts -- Lignin Degradation of Water Hyacinth for Bioethanol Production Using Yeast.
Sommario/riassunto	This handbook provides a comprehensive and up-to-date overview of lignin research and applications, covering topics such as lignin structure, extraction, characterization, functionalization, surface modification, and applications. Lignin is an essential plant polymer that has been widely researched as a potential source of renewable energy and as a valuable raw material for the production of various chemicals and materials. This book is divided into three sections that give in-depth insights into the main topics such as (1) Lignin structure, extraction methods, and characterization techniques; (2)

Functionalization, surface modification, and properties of lignin-based materials; (3) Applications of lignin in various industries, including the automotive, packaging, and construction industries. This book is a valuable reference source for graduates and postgraduates, engineers, research scholars (primarily in the fields of material science, polymer chemistry, and polymer physics), material engineers, and technologists from industries.