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Titolo	An Integrated Approach for Added-Value Products from Lignocellulosic Biorefineries : Vanillin, Syringaldehyde, Polyphenols and Polyurethane / / by Alírio Egídio Rodrigues, Paula Cristina de Oliveira Rodrigues Pinto, Maria Filomena Barreiro, Carina Andreia Esteves da Costa, Maria Inês Ferreira da Mota, Isabel Fernandes
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Nota di contenuto	Chapter 1: Chemical pulp mills as biorefineries -- Chapter 2: Integrated process for vanillin and syringaldehyde production from kraft lignin -- Chapter 3: Polyurethanes from recovered and depolymerized lignins -- Chapter 4: Polyphenols from bark of Eucalyptus globulus. - Chapter 5: Conclusions and future perspectives -- Chapter 6: References.
Sommario/riassunto	This book offers the state of the art on the progress and accomplishments of 25 years of research at the Associate Laboratory LSRE-LCM - Laboratory of Separation and Reaction Engineering - Laboratory of Catalysis and Materials on lignin conversion to value-added products and their downstream separation. The first valorisation pathway presented for lignin is its partial depolymerisation by

oxidation for the production of low molecular weight phenolic compounds, such as vanillin and syringaldehyde, and the second one is the lignin application as macromonomer for polyurethane synthesis. In this book, the authors present the integration of these two valorisation pathways as an exclusive vision of LSRE-LCM resulting from hands-on experience on reaction and separation processes: the integrated process for lignin valorisation. In this perspective, the lignin is oxidized to simultaneously produce syringaldehyde and vanillin, and the obtained by-products to produce a polyol for lignin-based polyurethanes, completing the lignin value chain. On the perspective of pulp mill-related biorefineries, a valorisation route for eucalyptus bark is also presented, focusing on LSRE-LCM experience on extraction and separation of bioactive polyphenols, giving some insights about further integration of extracted bark on biorefining operations.