

Advances in Lignocellulosics Characterization

TABLE OF CONTENTS

Preface	iii
Section I: Structure of Wood Components	
1. Isolation and Characterization of Residual Lignin.....	1
2. Chemical Heterogeneity in Wood Lignins	43
Section II: Magnetic Resonance Techniques	
3. Solution-State NMR of Lignins	55
4. Applications of Quantitative ^{31}P NMR to Pulping, Bleaching and Yellowing	109
5. Recent Advances in Residual Kraft Lignins Characterization Combining ^{31}P NMR and Fluorescence Spectroscopy by Chemometrics.....	131
6. Applications of NMR Spectroscopy to the Analysis of Wood/Adhesive Bondlines.....	145
7. NMR Studies on the Conformation of Polyflavanoids and their Association with Proteins.....	157
Section III: Vibrational/Rotational Spectroscopy	
8. Use of Diffuse Reflectance UV-Visible Spectroscopy to Characterize Chromophores in Wood.....	179
9. An Overview of Raman Spectroscopy as Applied to Lignocellulosic Materials	201
10. Characterization of the Wettability of Wood Resin by Contact Angle Measurement and FT-Raman Spectroscopy	227

Section IV: Chromatographic Techniques

11. Molecular Weight Determination of Softwood Kraft Cellulose:
Effects of Carbanilation Solvent, Hemicelluloses and Lignin 239
12. Surface Energy Characterization of Wood Particles by Contact
Angle Analysis and Inverse Gas Chromatography..... 263
13. Chemical Analysis and Interpretation of Extractives 295

Section V: Microscopic and Computational Methods

14. Supramolecular Architecture of Wood Cell Wall Cellulose:
Characterization Using Infrared Microspectroscopy and
Liquid-Mode Atomic Force Microscopy..... 337
 15. Combined Experimental and Computational Studies of Lignin 357
- Subject Index 379
- About the Editor Back Cover