Analytical Techniques and Methods for Biomass

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Preface

The use of biomass as a renewable raw material to substitute oil is a topic of strong academic, industrial and marketing appeal due to the establishment of a green economy (or bioeconomy) less harmful to the environment. Thus, more than ever, it has sought to expand the biomass uses beyond those already in use, such as agriculture and energy. In order to develop new products and processes, and ensure the quality of existing ones, it is fundamental to carry out chemical analysis of raw materials as both the products and their co-products and residues.

The objectives of the book are (1) to demonstrate the importance of analytical chemistry in understanding the chemical composition of biomass and its products and (2) to introduce modern techniques and their methods of analysis, which can positively influence in a direct way the improvements of products and processes and reduce the environmental impacts of biomass chains, focusing on plant. These precedents are based on great efforts seeking to advance scientific knowledge of chemical analysis, which has been occurring over decades of work by the chemical community.

The authors conducted a thorough survey of the relevant analytical techniques to the biomass, based on their academic and professional experience and the trends in current analytical science, as well as consideration of other relevant aspects such as the proposal for a more sustainable chemistry. The theoretical principles of analytical techniques are presented in order to direct their applications, since the book is aimed at researchers, scientists, biomass professionals and graduate students who already have knowledge in analytical chemistry and organic chemistry. Thus, it is intended to transmit a sound knowledge about the most useful analytical techniques and methods applied to the main types of biomass and their products, in order to allow them to develop their analytical methods and interpret the results.

Good lecture!

Brasília, Brazil — Sílvio Vaz Jr.

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