



Natural Product Extraction: Principles and Applications (Green Chemistry Series)

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Natural products are sought after by the food, pharmaceutical and cosmetics industries, and research continues into their potential for new applications. Extraction of natural products in an economic and environmentally-friendly way is of high importance to all industries involved. This book presents a holistic and in-depth view of the techniques available for extracting natural products, with modern and more environmentally-benign methods, such as ultrasound and supercritical fluids discussed alongside conventional methods. Examples and case studies are presented, along with the decision-making process needed to determine the most appropriate method. Where appropriate, scale-up and process integration is discussed. Relevant to researchers in academia and industry, and students aiming for either career path, this book presents a handy digest of the current trends and latest developments in the field with concepts of green chemistry in mind.

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Editorial Review

Review

This book gives an in-depth review of the state-of-the-art techniques for the extraction and processing of natural products and the factors influencing the performance of the process.

The book incorporates a number of very useful case-studies. This book is recommended to chemists, chemical-, bio-, food- and environmental engineers working in the academic or industrial sectors. The book may be used well in the training of students in green chemical courses. (Gyorgy Keglevich *Current Green Chemistry*)

„Natural Product Extraction” is the 21. part within the series of „RSC Green Chemistry”. The pool of natural products represents a valuable source for bioactive compounds. On the one hand, important medicines, foods and cosmetics comprising classical and new representatives may be obtained by the extraction of different plants/crops (natural sources), on the other hand, the production of such chemicals is much more environmentally friendly (“greener”) than their processment by chemical syntheses due to the concerns of the negative effects meant by the use of solvents, formation of by-products and insufficient atomic efficiency.

This book gives an in-depth review of the state-of-the-art techniques for the extraction and processing of natural products and the factors influencing the performance of the process. Chapter 1 shows the possible use and applications of natural products. The extracts comprise foods, fat, oils and colouring agents. Chapters 2-6 present both conventional (soaking, Soxhlet, distillation with water and/or steam) and up-to-date (ultrasound- or microwave-assisted, “accelerated” liquid, or supercritical fluid) extraction techniques. Then, the recent trends and perspectives for the extraction of natural products are discussed in a Chapter 7 followed by the possible post-extraction processes (purification, particle size reduction and formulation) of the extracts. Chapter 9 provides information on the isolation and purification of natural products by solvent partitioning, adsorption enrichment, membrane separation, and solid phase extraction, as well as purification by chromatography and/or crystallization. Chapter 10 deals with the scale-up of extraction processes, while Chapter 11 discusses the pressurized fluid-based technologies for natural product processing. Finally, Chapter 12 provides the reader about the economic aspects of the scaled-up extraction technologies. The book incorporates a number of very useful case-studies.

This book is recommended to chemists, chemical-, bio-, food- and environmental engineers working in the academic or industrial sectors. The book may be used well in the training of students in green chemical courses. (Gyorgy Keglevich *Current Green Chemistry*)

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Relevant to researchers in academia and industry, and students aiming for either career path, *Natural Product Extraction* presents a handy digest of the current trends and latest developments in the field with concepts of Green Chemistry in mind.

About the Author

Dr Rostagno is an analytical chemist based at the University of Campinas, Brazil. His research interests include modern extraction and analysis techniques and materials, phytochemicals and natural products.

Users Review

From reader reviews:

Catherine Estey:

Natural Product Extraction: Principles and Applications (Green Chemistry Series) can be one of your basic books that are good idea. Many of us recommend that straight away because this publication has good vocabulary which could increase your knowledge in vocabulary, easy to understand, bit entertaining but nonetheless delivering the information. The writer giving his/her effort to place every word into delight arrangement in writing Natural Product Extraction: Principles and Applications (Green Chemistry Series) however doesn't forget the main position, giving the reader the hottest as well as based confirm resource information that maybe you can be one of it. This great information can certainly drawn you into fresh stage of crucial considering.

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