

The book is divided into three major sections of different lengths:

1. Green Chemistry for sustainable development.
2. New synthetic methodologies and the demand for adequate separation processes.
3. New developments in separation processes.

The book moves from the general (Part 1) to the technical (Part 2). Part 2 has three chapters entitled:

1. Microreactor technology for organic synthesis.
2. Solventless reactions.
3. Combinatorial Chemistry on solid phases.

In the first chapter of this section, the authors note:

“We first describe some characteristic key features of microreactors. Secondly we outline a shortcut regarding the fabrication of various types of microreactors and then we present some selected examples from the growing number of exciting applications in organic synthesis. We subsequently discuss the capabilities offered by microstructured devices for the work-up of reaction mixtures today. Finally, we complete the survey with the discussion of how microreactors will contribute to a greener chemistry and a reflection of the bottlenecks limiting the widespread use of microreaction technology.”

In Chapter 2 of this section, we find this comment on solventless reactions:

“To encompass these basic principles, the number of publications related to green chemistry and engineering has grown rapidly in the past decade, featuring such aspects as solventless (dry media), solid supported and solid/solid reactions, the use of room temperature and ionic liquids, supercritical carbon dioxide, and water as alternative reaction media combined with microwave irradiation, fluorosolvents, and catalysis.”

The final chapter in this section (Combinatorial Chemistry on solid phases) is a fundamental technique based on polymeric resin beads to which a reactant is covalently bonded.

The final, and longest section, of the book deals with green separation processes. The first chapter in this section is a general introduction to the topic. It was written by Richard D. Noble of the University of Colorado, Boulder, CO. He notes in his concluding paragraph that:

“A general understanding of separations facilitates the development of entirely new methods of separation. Insight into the capabilities of a variety of methods helps us to identify when the ability to separate will pose a major process limit. An understanding of solution and complexation chemistry makes it possible to identify and select among the potential mass separating agents for different applications and to transfer the use of particular agents and

chemical functionalities among different types of separation processes.”

Following Noble's introduction, there several well-written, technical chapters, each dealing with a specific separation process. These chapters discuss: distillation, green enantiomeric separations by inclusion complexation, chromatography: a non-analytical view, fluid extraction, membrane processes, nanostructures and separation, and separations using superheated water.

The book ends with this final thought by the editors: “To conclude, we believe that Chemistry will have a central role in the transition towards a sustainable, competitive and knowledge-based economy and society. In combination with its own supplier and downstream sectors it may contribute decisively to improved economic and social welfare.”

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**Stephen A. Bortone (Ed.), Estuarine Indicators, CRC Press, Boca Raton, FL, 2005, 553 pages, US\$ 129.95, UK£ 74.95, ISBN 0-8493-2822-5.**

This book is the 26th in CRC's Marine Science Series which “. . . is dedicated to providing state-of-the-art coverage on important topics in marine biology, marine chemistry, marine geology and physical oceanography.” This current book compliments its predecessors in the series.

This book is based on the chapter authors' contributions presented at the Estuarine Indicators Workshop held on Sanibel Island in October 2003. The submitted manuscripts were technically reviewed before publication.

The book contains 31 papers authored by 90 scientists. The first paper is authored by Bortone who writes:

“Some of the chapters offer presentation on the application and effectiveness of estuarine indicators currently used by research scientists. Other chapters present documented arguments for the future consideration of indicators not previously considered nor generally accepted as estuarine indicators. Still other chapters offer insight into the overall role that estuarine indicators play in estuarine management decisions, now and in the future. The chapters are arranged to lead the reader to fully appreciate the need, problems, complexity, breadth, and application of estuarine indicators. Although each chapter contains elements of each of these features, the

particular organization begins with an overall introduction to the multifaceted nature of estuarine indicators, followed by a series of chapters that demonstrate the range and complexity of estuarine indicators, including biotic and abiotic indicators. The diverse array of biotic indicators is arranged, more or less, in a phylogenetically hierarchical order and includes indicators that are molecular, species-based, populational, and community oriented. Last, a series of chapters offers glimpses of larger-scale applications and considerations of estuarine indicators culminating in demonstrations of their utility in the management of estuarine ecosystems.”

In the concluding paper, Bortone combined with S. Marshall Adams to write:

“Estuaries are complex, variable, and diverse; consequently, they present unique challenges relative to understanding the effects of environmental stressors on these systems. Because of these challenges, the main purpose of Estuarine Indicators Workshop and this subsequent volume was to bring together a diverse group of estuarine scientists to present and discuss the principles, concepts, and practical use and application of indicators in estuarine research and management practices. Thus, the principal objectives of this volume were to

(1) identify the major effects that natural and anthropogenic stressors have on estuarine systems, (2) help identify and understand the underlying cause(s) of these effects, and (3) provide guidelines and recommendations for the development and use of indicators in the effective environmental management of estuarine ecosystems.”

In my opinion, the book fulfills these goals as well as can be expected and will be a valuable resource for estuarine researchers.

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