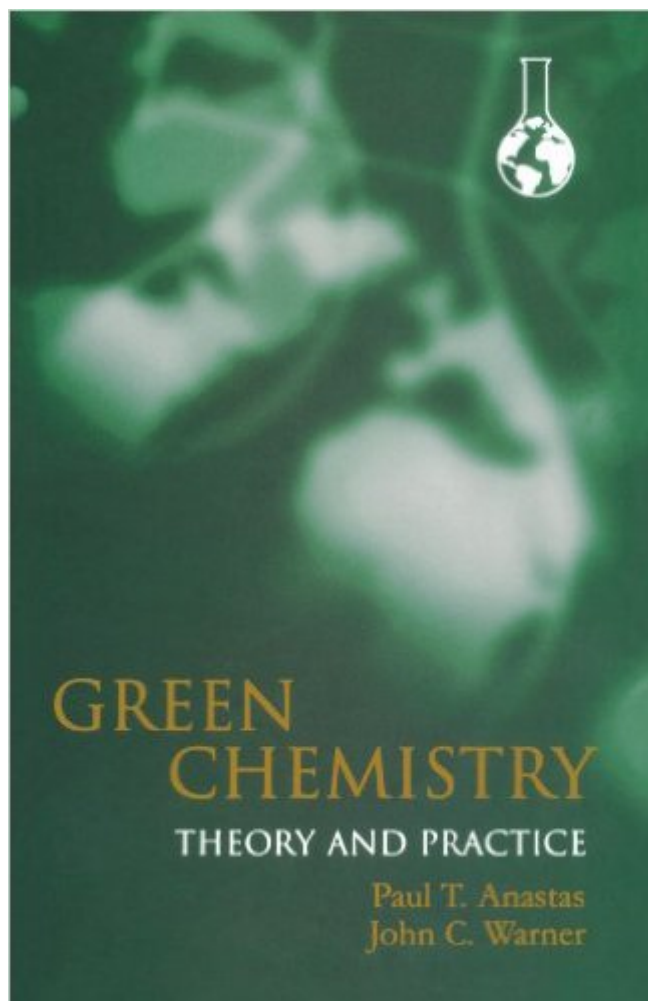


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Green Chemistry: Theory And Practice



Synopsis

This book provides the first introductory treatment of the design, development, and evaluation processes central to Green Chemistry. As a comprehensive textbook, it takes a broad view of the subject and integrates a wide variety of approaches. Topics include alternative feedstocks, environmentally benign syntheses, the design of safer chemical products, new reaction conditions, alternative solvents and catalyst development, and the use of biosynthesis and biomimetic principles. It introduces new evaluation processes that encompass the complete health and environmental impact of a synthesis, from the choice of starting materials to the final product. Throughout, the text provides specific examples which compare the new methods with classical ones.

Book Information

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Customer Reviews

"What is green chemistry? In *Green Chemistry: Theory and Practice*, Paul T. Anastas and John C. Warner provide a concise and comprehensive answer: 'Green chemistry is the utilization of a set of principles that reduces or eliminates the use or generation of hazardous substances in the design, manufacture and application of chemical products.' . . . Measure by measure, [Anastas] and Warner fill this abstract and fairly broad definition with life. Their short book provides a framework for the pursuit of environmentally compatible chemistry. This introductory text is intended to provide a basis for teaching and includes a collection of exercises for the topics of each chapter. . . . [This book] should be consulted by anyone who wants to know about environmentally benign chemistry and, especially, by scientists who contemplate adopting its principles in their own research or teaching

efforts."--Science"Historically, as Paul Anastas and John Warner point out in Green Chemistry: Theory and Practice, synthetic chemists have not been particularly environmentally conscious, since their involvement was at the beginning of the chemical synthetic chain whereas problems were mostly encountered at its end. The solution is the replacement of these technologies with cleaner catalytic alternatives. The emphasis is on eliminating waste at source--primary pollution prevention--rather than finding incremental end-of-pipe solutions. This has now become known as green chemistry, and is defined by Anastas and Warner as: 'The utilization of a set of principles that reduces or eliminates the use or generation of hazardous substances in the design, manufacture and application of chemical products'. The tools of green chemistry are alternative feedstocks, solvents and reagents, and catalytic versus stoichiometric processes."--Nature"Anastas from the US Environmental Protection Agency and Warner (chemistry, U. of Massachusetts-Boston) introduce the design, development, and evaluation processes of a currently active area of research that concentrates on the handling and use of chemicals to ensure efficiency but also human and environmental compatibility. They take a wide view and integrate such topics as alternative foodstocks, environmentally benign synthetic methodologies, designing safer chemical products, new reaction conditions, alternative solvents and catalyst development, and the use of biosynthesis and biomimetic principles. They also describe a new evaluation process that encompasses the health and environmental impact of a synthetic pathway from the choice to starting materials to the target molecule. They write for graduate and professional chemists, and include exercises for classroom or individual study."--SciTech Book News

Dr Paul T. Anastas Prof. John C. Warner Chief, Industrial Chemistry Branch Department of Chemistry U.S. Environmental Protection Agency University of Massachusetts Boston 401 M St S.W. 100 Morrissey Blvd Mail Code 7406 Boston Washington M.A. 02125-3393 D.C. 20460 U.S. U.S.

This should be the book in a class required for all chemical engineers, and they should be bound to the equivalent of an engineer's Hippocratic Oath after reading it. Do not expect detailed process diagrams on how to sustainably produce plastics and other products, but do expect short and concise guidelines and considerations for the production of things from a life cycle perspective. An engineer might be deeply interested in producing a material with some key ingredients to make it stronger and cheaper, but the last 60 years have shown us that this kind of myopic progress leaves a trail of waste and health hazards behind it. This book addresses that concern by outlining

considerations for making things, achieving the purpose of their manufacture, yet also considering the lasting impact in a cradle-to-grave life cycle. The principles are sound and do not interfere with the engineering process, but instead add to it.

Thoroughly gave an accurate product description for what kind of condition it was in. It was very helpful. Great purchase!

Good book.

Ever chemistry student needs to read this book!

nice

This book is a good introduction to green chemistry. It is fairly concise and direct and gives an overview of the concepts one can use to make chemistry better for the environment. For most technical applications of the techniques described in the book, additional sources will need to be consulted, however.

I love it!

I haven't read the entire book, though it is small. I recently heard the authors speak and was happy to have some framework put to the topic and some parameters drawn that offer some guidelines for understanding. Previously the term "green chemistry" was as fuzzy as the electron cloud.

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