Green Techniques for Organic Synthesis and Medicinal Chemistry

Description: Green chemistry is a new way of looking at organic synthesis and the design of drug molecules, offering important environmental and economic advantages over traditional synthetic processes. Pharmaceutical companies are increasingly turning to the principles of green chemistry in an effort to reduce waste, reduce costs and develop environmentally benign processes.

Green Techniques for Organic Synthesis and Medicinal Chemistry presents an overview of the established and emerging techniques in green organic chemistry, highlighting their applications in medicinal chemistry. The book is divided into four parts:

- Introduction: Introduces the reader to the toxicology of organic chemicals, their environmental impact, and the concept of green chemistry.
- Green Catalysis: Covers a variety of green catalytic techniques including organocatalysis, supported catalysis, biocatalysis, fluorous catalysis, and catalytic direct C–H bond activation reactions.
- Green Synthetic Techniques: Presents a series of new techniques, assessing the green chemistry aspects and limitations (i.e. cost, equipment, expertise). Techniques include reactions in alternative solvents, atom economic multicomponent reactions, microwave and ultrasonic reactions, solid-supported synthesis, fluororous and ionic liquid–based recycling techniques, and flow reactors.
- Green Techniques in Pharmaceutical Industry: Covers applications of green chemistry concepts and special techniques for medicinal chemistry, including synthesis, analysis, separation, formulation, and drug delivery. Process and business case studies are included to illustrate the applications in the pharmaceutical industry.

Green Techniques for Organic Synthesis and Medicinal Chemistry is an essential resource on green chemistry technologies for academic researchers, R&D professionals and students working in organic chemistry and medicinal chemistry.

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Nicholas D. Anastas

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