

This book provides a comprehensive and systematic account of pyrimidine chemistry with a strong emphasis on sustainable and energy-efficient synthetic methodologies. Chapters 1 and 2 establish the foundation by introducing the structural features and properties, biological importance, and pharmaceutical relevance of pyrimidine, followed by a critical overview of classical and modern synthetic approaches. These chapters highlight the limitations of conventional methods in terms of energy consumption, reaction time, and environmental impact, thereby justifying the need for greener alternatives. Chapter 3 discusses the principles of green chemistry and their relevance to heterocyclic synthesis, emphasizing atom economy, safer solvents, catalysis, and energy efficiency. Chapters 4 and 5 focus on natural and biowaste-derived catalysts, detailing their preparation methods and correlating catalyst properties with catalytic performance. Chapters 6 to 8 present a detailed exploration of pyrimidine synthesis under different activation modes. Overall, the first eight chapters collectively establish a strong theoretical and methodological framework for green, multimethod pyrimidine synthesis.



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Multimethod Synthesis of Pyrimidine Using Natural Catalysts

Green, Energy-Efficient and Sustainable Approaches

