

Advanced Drug Delivery Systems

Concepts and Applications

Abushan Khan

Advanced Drug Delivery Systems: Concepts and Applications

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Preface

Drug administration has advanced beyond tablets and injections. Advanced, specialized therapy options exist. Modern healthcare must find ways to improve medicine delivery methods' lack of specificity, systemic toxicity, and limited bioavailability. By combining clinical medicine, pharmaceutical sciences, and bioengineering, this book covers contemporary medication delivery technologies. Academics, healthcare professionals, and graduate students benefit from its practical applications of scientific principles. This book covers tailor-made treatments, nanoparticulate carriers, and intelligent drug delivery systems that adapt to the body. All chapters look at important factors for applying science in real life, including scientific principles and the clinical and regulatory issues that matter. New topics, including responsive delivery systems, tailored medicine, and drug-device combinations, are gaining attention. These themes illustrate transdisciplinary pharmaceutical research and scientific integration. Modern pharmaceutical distribution methods aim to enhance patient outcomes while staying accessible in global healthcare systems. Information systems, biotechnology, and nanotechnology are converging to generate new disease therapies, and this book helps explain this fast-changing area. Development and distribution of novel drugs to the right patients are crucial to medicine's future. This book provides readers with the knowledge and tools they need to develop this essential discipline and translate scientific advances into concrete benefits for people worldwide.

Mr. Abushan Khan

Editor

Department of Pharmacy, Research Scholar

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Chapter 1: Foundations of Advanced Drug Delivery: Principles and Challenges