

Preface

Catalyst is a workhorse for water purification. It works through three main processes, such as photocatalysis, catalytic wet air oxidation and biocatalysis in the field of water treatment. Although a significant number of advances has been noticed in the field of former two processes, biocatalysis has remained opaque in the field of water purification. Enzyme is an effective green biocatalyst and protein in nature which has several quintessential properties, such as multi-substrate specificity, high sensitivity, active in milder reaction conditions, wide pH, and temperature ranges, low reaction times, less by-products formation, and eco-friendly. But free enzymes are not stable and are sensitive to mechanical stresses. In order to improve their stability and reusability, enzymes should be immobilized onto various supports. This book aims to show how to prepare a nanomaterial matrix for enzyme immobilization. This book is intended to give beginning scientists grassroots scientific knowledge from the preparation of NanoBiohybrid (i.e., enzyme immobilized onto carbon nanotube) to the demonstration of water purification. The beauty and intricacy of carbon nanotube purification and functionalization have been presented before developing the NanoBiohybrid catalyst. The book might have an appeal to nanotechnologists, physicists, chemists, environmentalist, biologists, water specialists, chemical engineers, and industrialists who are closely working in the field of catalysis. I hope to help you eat this elephant by giving you one bite at a time.

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