

Preface

Research and development of kinetic studies has become one of the most expanding fields in physics, chemistry and materials science. One reason for this trend is that this field bridges various scientific disciplines. The hype concerning nanotechnology in recent years has given an additional boost to this topic. The requirements for better understanding of this fundamental aspect is a driving force for the research and development in this area.

This book provides scientists, researchers and also interested people from other branches of science, with the opportunity to learn a new method of non-isothermal kinetic analysis and its application in heterogeneous solid state processes.

The book is divided into six chapters: [Chap. 1](#) is an introduction to the basic concepts of kinetics; [Chap. 2](#) describes a new, realistic and more accurate non-isothermal kinetic method; [Chap. 3](#) shows application of this method on the mechanistic determination of evolution of a nanosystem and [Chap. 4](#) is kinetic analysis of a heterogeneous solid state process through the aforementioned method.

The breadth of the topic means that not all topics can be covered; however the interested reader will find additional references at the end.

It is a great pleasure to thank those who have helped during the course of writing this book. I wish to record my gratitude to my students who have sometimes made me think very hard about things I thought I understood. I have benefitted greatly from discussions with Prof. Amitava Basumallick and his suggestions. I am also grateful to my student Kakoli Bhattacharya for fruitful discussions and technical assistance. I am leaving the book in your hands and take your leave sharing a quotation from one of the greatest philosophers, Oliver Wendell Holmes, who said “Man’s mind, once stretched by a new idea, never regains its original dimensions”. It is my hope that this book will help in stretching the limits of thinking in all those who come into contact with it.

Tezpur, December 2013

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Kinetics of Heterogeneous Solid State Processes

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2014, VII, 49 p. 27 illus., Softcover

ISBN: 978-81-322-1755-8