

1. Record Nr.	UNINA9911020413903321
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Titolo	From Experimental Kinetic Data to Reaction Mechanisms // by Carlos Bravo-Diaz, Sonia Losada-Barreiro, José G. Santos, Margarita E. Aliaga
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2025
ISBN	3-031-90702-7
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (330 pages)
Collana	Physical Chemistry in Action, , 2197-4357
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Disciplina	541.394
Soggetti	Chemical kinetics Chemistry, Physical and theoretical Catalysis Materials Reaction Kinetics Physical Chemistry Catalytic Materials
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Techniques and methods to monitor chemical reactions -- Basic Kinetic Concepts -- Rates of some complex reactions and simplification of reaction schemes: steady-state and pre-equilibrium approximations -- Reactions in solution -- Catalysis -- Modeling chemical reactivity in multiphasic systems: microemulsions and emulsions -- Analysis of Kinetic Data: Effects of Solution Composition -- Non-linear regression analyses.
Sommario/riassunto	This textbook offers a deep dive into practical kinetics in solution, providing a comprehensive overview of the techniques and methods used to monitor chemical reactions. It addresses fundamental questions about reaction rates, rate laws, and the intricate dynamics of chemical processes. By connecting various experimental aspects required for kinetic and mechanistic research, it guides students on how to obtain, treat, and interpret experimental data to gain realistic

mechanistic insights. Divided into nine chapters, the textbook begins with an introduction to the basic concepts of chemical kinetics and an experimental perspective on monitoring chemical reactions. Subsequent chapters cover complex reactions, offering insights into simplifying reaction schemes through steady-state and pre-equilibrium approximations. Special attention is given to reactions in solution, highlighting diffusion-controlled and activation-controlled reactions, as well as the role of catalysis. The authors provide expert analyses of chemical reactivity in multiphasic systems, such as microemulsions and emulsions, offering a detailed understanding of these complex environments. The textbook also focuses on the analysis of kinetic data, including the effects of solution composition. It explores non-linear regression analyses, residuals, dataset size, noise, fitting functions, and the limits of fitting algorithms. Additionally, it presents comparisons between fitting data and experimental data, providing readers with valuable insights. This textbook is an invaluable resource for upper-undergraduate and graduate students conducting research in reaction kinetics. It is also essential for researchers and practitioners in chemistry, particularly those interested in reaction kinetics and chemical reactivity. With contributions from leading experts, this volume is a must-read for anyone looking to advance their understanding of chemical kinetics. .

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