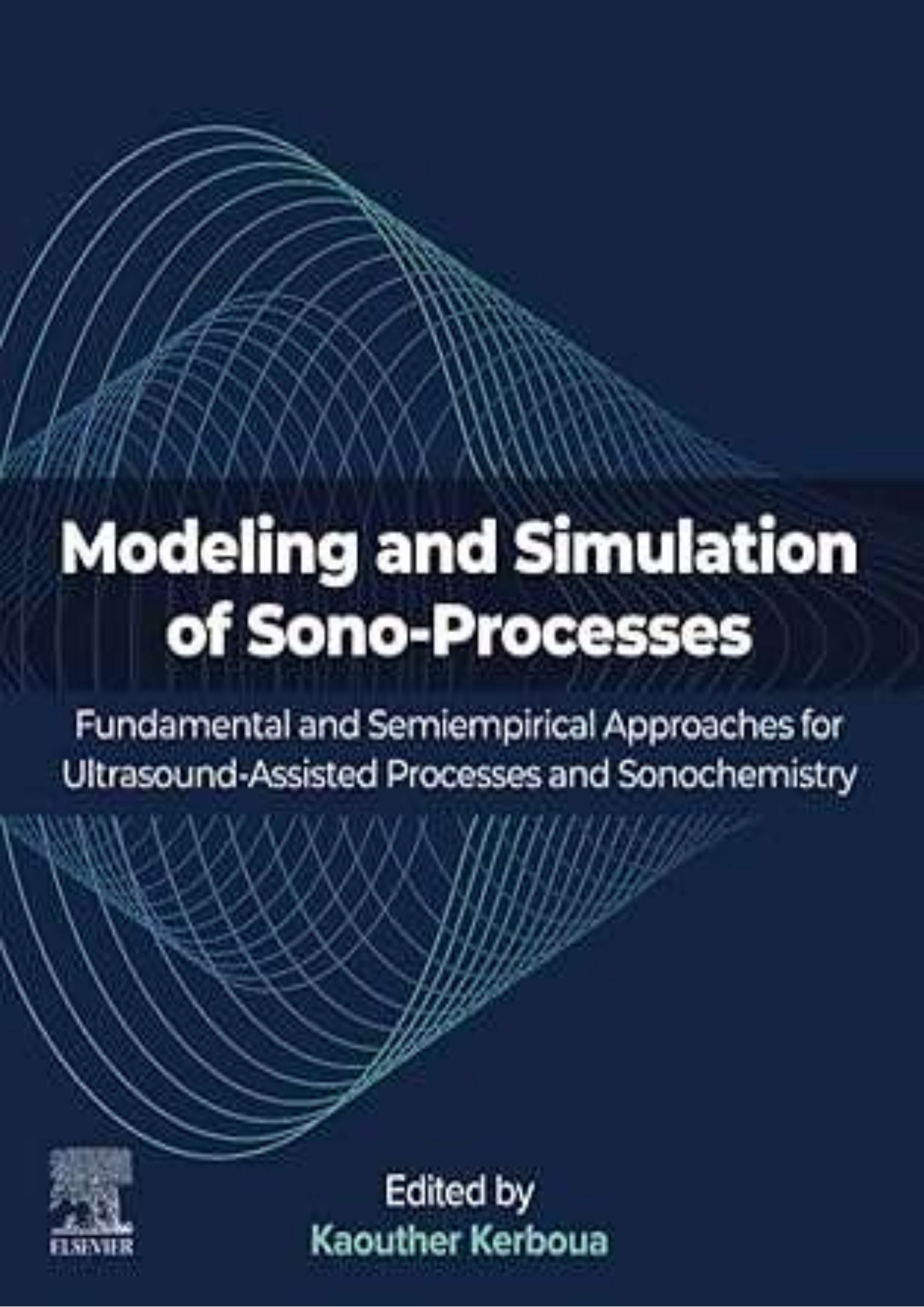




Modeling and Simulation of Sono-Processes

Fundamental and Semiempirical Approaches for
Ultrasound-Assisted Processes and Sonochemistry



Edited by
Kaouthar Kerboua

Modeling and Simulation of Sono-processes provides an overview of the mathematical modeling and numerical simulation as applied to sono-process-related phenomena, from the microscopic to the macroscopic scale, collecting information on this topic into one dedicated resource for the first time. It covers both fundamental and semi-empirical approaches and includes both physical and chemical effects.

Single acoustic cavitation bubble and bubble population-related aspects are modeled mathematically, and numerical simulation procedures and examples are presented. In addition, the procedure involving semi-empirical modeling of sonochemical activity and sonochemical reactors is demonstrated and ultrasound assisted processes (hybrid processes) are demonstrated including several case studies.

Modeling and Simulation of Sono-processes is written primarily for advanced graduates or early career researchers in physics, physical chemistry or mathematics who want to use mathematical modeling and numerical simulation of aspects related to acoustic cavitation bubble, bubble population, sonochemistry, sonochemical reactors and ultrasound-assisted processes.

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