treatment of rate equations. For instance, no example is given of a case in which the balance equation contains a generation term.

In general, the advantages of the book outweigh its disadvantages. This refers in particular to the simplicity of introduction of basic concepts. For this reason it will continue to be used, although it does not fit our teaching pattern as neatly as it does the American pattern.

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P. P. PROKHORENKO, N. V. DEZHKUNOV and G. E. KONOVALOV, **Ultrasonic Capillary Effect.** Nauka i Tekhnika, Minsk, 1981.

IN RECENT years, growing attention has been given to the problem of the acceleration of mass transfer processes in capillary-porous bodies, since these processes are used extensively in various industrial technologies. Particularly promising in this regard is the use of ultrasound, under the effect of which the depth and speed of liquid media penetration into capillary-porous bodies increase. This phenomenon is known as the ultrasonic capillary effect. This book is concerned with the study of this effect. One should emphasize the complexity of the problem studied which involves the physics and chemistry of liquids and solid bodies, and, naturally, the propagation of acoustic vibrations in a very complex system.

The ultrasonic capillary effect is in use in many diversified areas of technology, in consequence of which the relevant publications are scattered about in all sorts of periodicals. This reinforces the timeliness of the book, in which the results of theoretical and experimental investigations of the effect have been generalized for the first time. Here it should be emphasized that a considerable portion of the book consists of original studies carried out by the authors.

The book is composed of a preface, introduction and three chapters. Chapter 1 surveys the current state of investigations of the ultrasonic capillary effect, analyzes the possible reasons for this phenomenon, advances the idea of the decisive role of cavitational processes. Chapter 2 considers the dependence of the ultrasonic capillary effect on the liquid properties as well as the mechanism underlying the cavitational effect of ultrasound on liquid penetration into capillaries. It also analyzes the dependence of the effect's magnitude on the surface tension, viscosity, vapour elasticity and gas content in a liquid. A physical model is developed for the ultrasound effect on the liquid in the capillary, which is based on the idea that the resulting liquid flow into the capillary is due to an asymmetric collapse of cavitational bubbles at the capillary inlet. The effect is shown to increase with the population of cavitational bubbles and the energy of cumulative jets formed on their collapse.

The third chapter considers the problems associated with the practical application of the capillary effect for the enhancement of such processes as soaking of porous bodies, bonding, metal spray coating, cleaning of filters. It is shown that a very important field of the ultrasonic capillary effect application is the capillary nondestructive control.

The choice of the material and the character of its presentation in the book have been influenced by the scientific interests of the authors themselves who contributed much to the studies of the ultrasonic capillary effect. In our opinion, it would be desirable if the authors could pay more attention to the problems associated with the effect of ultrasound in the regimes when there are no cavitational bubbles.

The book will undoubtedly be of use for the research workers dealing with the study of the ultrasonic capillary effect and also for all those who employ this effect in different branches of technology.

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