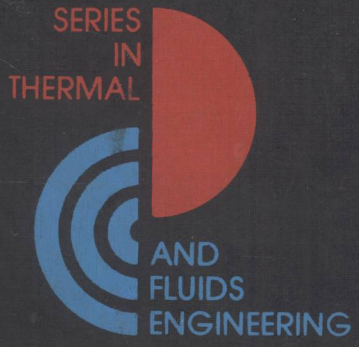
SJOERD VAN STRALEN
ROBERT COLE

Boiling Phenomena

VOLUME 2



BOILING PHENOMENA

Physicochemical and Engineering Fundamentals and Applications

Volume 2

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With Invited Contributions

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This book is dedicated to the memory of my beloved wife Alida Leijerweert, who encouraged and inspired me in close harmony during two happy decades. (SvS)

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Preface

In 1973, the editorial board of the Dutch journal *Polytechnisch Tijdschrift*, edition *Procestechniek* (editors H.J. Meemeling and Ir. F.J.G. Kwanten) kindly invited one of us (S) to write a contribution on film boiling. Ultimately, this invitation resulted in a series of 16 papers entitled "Kookverschijnselen" (Boiling Phenomena), which appeared during 1974–1979. This series formed the basis for the present book.

During a sabbatical stay (1971–1972) at Eindhoven University of Technology, one of us (C) presented a series of lectures on boiling nucleation and nucleate-boiling heat transfer. Revised and extended versions of these lectures have been incorporated into the present book.

While preparing the manuscript, we became aware of the desirability of including a number of chapters on additional (but related) topics by invited specialists. Their contributions increase the versatility of the book and, in some instances, present differing but complementary opinions. Also, we have included a number of recent developments and results that have not yet appeared in the published literature.

We confess that the preparation of a book on the physical basis of boiling phenomena is (at this time) still a precarious enterprise. Nevertheless, we hope that the book may be a reliable guide to both research workers and graduate students, and may inspire them to establish a further understanding of the fundamental phenomena and their applications to complex engineering systems.

Sjoerd van Stralen
Robert Cole

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We are indebted to Professor D.A. de Vries for continued friendly cooperation, support, and encouragement over a period of many years. Thanks are due to W.M. Sluyter, C.A. Copray, J.G.M. Niessen, A.G.M. Linssen, W.A.M. Aarnink, Mrs. H. Weise-Bornebroek, and the "Reproduction Service" (all of Eindhoven University), Mrs. Marlene Wright (Clarkson College), and many others for assistance in the preparation of the manuscript, the artwork, and the index.

We also acknowledge the enjoyable cooperation of the invited contributors, and that of the president (Mr. W. Begell) and the editors of Hemisphere Publishing Corporation. Further, we wish to acknowledge the kind invitation of Professors J.P. Hartnett, T.F. Irvine, and J.P. Holman to include the book in the Series in Thermal and Fluids Engineering.

Permission has been granted to one of us (S) by the editorial board of the *Polytechnisch Tijdschrift*, edition *Procestechniek*, and by the Pergamon Press, Ltd., to translate or reprint material from his published papers; reprinted material originally appeared in the *International Journal of Heat and Mass Transfer*, volumes 9–22 (1966–1979).

Sjoerd van Stralen
Robert Cole

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