

Contents

1	Introduction	1
2	Background for Pure (One Component) Substance	3
	References	7
3	Evaporation and Condensation of Vapor–Gas Mixtures	9
3.1	Liquid Evaporation in Vapor–Gas Mixtures	10
3.1.1	Problem and Solution Method	10
3.1.2	Results and Analysis	12
3.2	Condensation from Vapor–Gas Mixture	18
3.2.1	Statement of the Problem	19
3.2.2	Results and Discussion	21
	References	22
4	Motion of Vapor–Liquid Interfaces	25
4.1	Motion of Helium II Bridges in Capillary Channels with Vapor at the Presence of Longitudinal Heat Flux	25
4.1.1	Statement of the Problem	26
4.1.2	Description of the Model, Basic Equations and Results	26
4.2	Evolution of Vapor Films at Boiling of He-II and Ordinary Liquids	32
4.2.1	Statement of the Problem and Basic Equations	32
4.2.2	Results and Discussions	36
4.2.3	The Model with Constant Interphase Temperature	36
4.2.4	The Model Accounting for Heat Transfer in Superfluid Helium	38
4.3	Conclusion	38
	References	39
5	Liquid–Vapor Interface Form Determination	41
5.1	Statement of the Problem and Model	42
5.2	Comparison with Experimental Data	45

5.3	Results Discussion	46
5.3.1	Immersion Depth Dependence on Drop Mass	48
5.3.2	Vapor Film Thickness Dependence on Time	49
5.3.3	Liquid Properties Influence	49
5.4	Conclusion	50
	References	51
6	Summary	53

Non-Equilibrium Phenomena near Vapor-Liquid
Interfaces

Kryukov, A.; Levashov, V.; Yulia, P.

2013, X, 54 p. 24 illus., 9 illus. in color., Softcover

ISBN: 978-3-319-00082-4