



Free Convection Film Flows and Heat Transfer

By De-Yi Shang

Springer-Verlag GmbH Apr 2013, 2013. Buch. Book Condition: Neu. 244x161x40 mm. Neuware - This book presents recent developments in our systematic studies of hydrodynamics and heat and mass transfer in laminar free convection, accelerating film boiling and condensation of Newtonian fluids, as well as accelerating film flow of non-Newtonian power-law fluids (FFNF). These new developments provided in this book are (i) novel system of analysis models based on the developed New Similarity Analysis Method; (ii) a system of advanced methods for treatment of gas temperature-dependent physical properties, and liquid temperature-dependent physical properties; (iii) the organically combined models of the governing mathematical models with those on treatment model of variable physical properties; (iv) rigorous approach of overcoming a challenge on accurate solution of three-point boundary value problem related to two-phase film boiling and condensation; and (v) A pseudo-similarity method of dealing with thermal boundary layer of FFNF for greatly simplifies the heat-transfer analysis and numerical calculation. A system of practical application equations on heat and mass transfer are provided in each chapter, which are formulated based on the rigorous numerical solutions with consideration of variable physical properties. In addition, in the second edition, other new research developments are further...



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