



Multiphase Flow Dynamics 4

By Nikolay Ivanov Kolev

Springer-Verlag GmbH Mrz 2012, 2012. Buch. Book Condition: Neu. 23.5x15.5x cm. Neuware - The present Volume 4 of the successful monograph package 'Multiphase Flow Dynamics' is devoted to selected Chapters of the multiphase fluid dynamics that are important for practical applications but did not find place in the previous volumes. The state of the art of the turbulence modeling in multiphase flows is presented. As introduction, some basics of the single phase boundary layer theory including some important scales and flow oscillation characteristics in pipes and rod bundles are presented. Then the scales characterizing the dispersed flow systems are presented. The description of the turbulence is provided at different level of complexity: simple algebraic models for eddy viscosity, simple algebraic models based on the Boussinesq hypothesis, modification of the boundary layer share due to modification of the bulk turbulence, modification of the boundary layer share due to nucleate boiling. The role of the following forces on the mathematical description of turbulent flows is discussed: the lift force, the lubrication force in the wall boundary layer, and the dispersion force. A pragmatic generalization of the k-eps models for continuous velocity field is proposed containing flows in large volumes and flows in porous...



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