Narayanan / Schwabe

Interfacial Fluid Dynamics and Transport Processes

Springer Verlag has been pleased to bring out this special volume on interfacial ?uid dynamics and transport processes. There are seventeen articles and each article is written in a pedagogical manner dealing with relevant research issues and questions. The intended audience is post-doctoral scientists, academicians and graduate students intending to pursue research and it is our hope that this volume will have lasting value. Several issues arise within the general ?eld of interfacial transport such as the instability of interfacial processes and driven ?ows. Instabilities occur when there is a sudden change in the structure of a solution as a control parameter is smoothly varied. They are usually accompanied by a change in the patterns in ?uid ?ow or temperature and concentration ?elds. Transport phenomena related instabilityattheinterfacehasmuchofitsoriginintheseminalworksofRayleigh whointhelaterpartofthe19thcenturyworkedonjets,gravitationallyunstably strati?ed ?uid layers, and on the ?rst ideas on convection. Some of these ideas were subsequently modi?ed by the work of Marangoni, Block and Pearson on surface tension driven instabilities. Over the years similar concepts have found place in solidi?cation and melting, electrodeposition, and other phase change problems.

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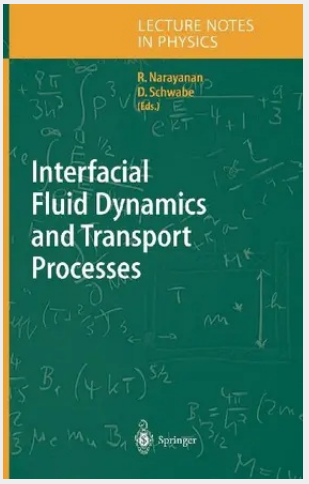

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