



The Classical Stefan Problem: Volume 45: basic concepts, modelling and analysis (Hardback)

By Gupta

ELSEVIER SCIENCE TECHNOLOGY, United Kingdom, 2003. Hardback. Condition: New. Language: English . Brand New Book. This volume emphasises studies related toclassical Stefan problems. The term Stefan problem is generally used for heat transfer problems with phase-changes such as from the liquid to the solid. Stefan problems have somecharacteristics that are typical of them, but certain problemsarising in fields such as mathematical physics and engineeringalso exhibit characteristics similar to them. The term``classical distinguishes the formulation of these $problems \ from their \ weak \ formulation, in \ which \ the \ solution \ need \ not \ possess classical \ derivatives.$ Under suitable assumptions, a weak solution could be as good as a classical solution. In hyperbolic Stefanproblems, the characteristic features of Stefan problems are present but unlike in Stefan problems, discontinuous solutions are allowed because of the hyperbolic nature of the heat equation. Thenumerical solutions of inverse Stefan problems, and the analysis ofdirect Stefan problems are so integrated that it is difficult to discuss one without referring to the other. So no strict line ofdemarcation can be identified between a classical Stefan problemand other similar problems. On the other hand, including everyrelated problem in the domain of classical Stefan problem wouldrequire several volumes for their description. A suitable compromise has to be made. The basic concepts, modelling, and analysis of...



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