1. Record Nr. UNINA9910454232903321

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Titolo	Phase equilibria, phase diagrams and phase transformations : their thermodynamic basis / / Mats Hillert [[electronic resource]]
Pubbl/distr/stampa	Cambridge : , : Cambridge University Press, , 2008
ISBN	1-107-17647-6 1-283-32974-3 9786613329745 1-139-13425-6 0-511-81278-7 1-139-12921-X 1-139-13141-9 0-511-50406-3 0-511-50620-1
Edizione	[Second edition.]
Descrizione fisica	1 online resource (xiv, 510 pages) : digital, PDF file(s)
Disciplina	541.363
Soggetti	Phase diagrams Phase transformations (Statistical physics)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 05 Oct 2015).
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Basic concepts of thermodynamics -- Manipulation of thermodynamic quantities -- Systems with variable composition -- Practical handling of multicomponent systems -- Thermodynamics of processes -- Stability -- Applications of molar Gibbs energy diagrams -- Phase equilibria and potential phase diagrams -- Molar phase diagrams -- Projected and mixed phase diagrams -- Direction of phase boundaries -- Sharp and gradual phase transformations -- Transformations in closed systems -- Partitionless transformations -- Limit of stability and critical phenomena -- Interfaces -- Kinetics of transport processes -- Methods of modelling -- Modelling of disorder -- Mathematical modelling of solution phases -- Solution phases with sublattices -- Physical solution models.
Sommario/riassunto	Computational tools allow material scientists to model and analyze

increasingly complicated systems to appreciate material behavior. Accurate use and interpretation however, requires a strong understanding of the thermodynamic principles that underpin phase equilibrium, transformation and state. This fully revised and updated edition covers the fundamentals of thermodynamics, with a view to modern computer applications. The theoretical basis of chemical equilibria and chemical changes is covered with an emphasis on the properties of phase diagrams. Starting with the basic principles, discussion moves to systems involving multiple phases. New chapters cover irreversible thermodynamics, extremum principles, and the thermodynamics of surfaces and interfaces. Theoretical descriptions of equilibrium conditions, the state of systems at equilibrium and the changes as equilibrium is reached, are all demonstrated graphically. With illustrative examples - many computer calculated - and worked examples, this textbook is an valuable resource for advanced undergraduates and graduate students in materials science and engineering.