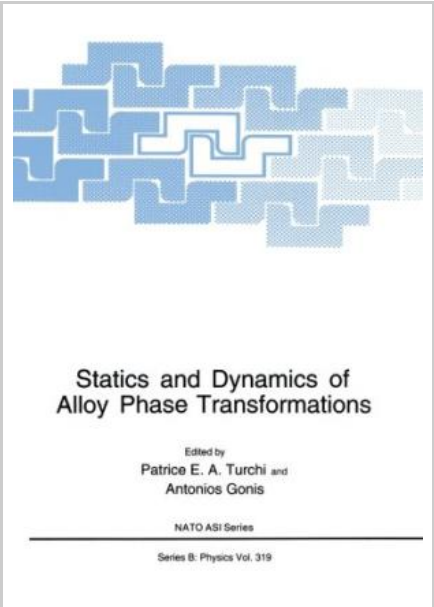

Statics and Dynamics of Alloy Phase Transformations (Paperback)

By -

Springer-Verlag New York Inc., United States, 2012. Paperback. Book Condition: New. 254 x 178 mm. Language: English . Brand New Book ***** Print on Demand *****.The study of phase transformations in substitutional alloys, including order-disorder phenomena and structural transformations, plays a crucial role in understanding the physical and mechanical properties of materials, and in designing alloys with desired technologically important characteristics. Indeed, most of the physical properties, including equilibrium properties, transport, magnetic, vibrational as well as mechanical properties of alloys are often controlled by and are highly sensitive to the existence of ordered compounds and to the occurrence of structural transformations. Correspondingly, the alloy designer facing the task of processing new high-performance materials with properties that meet specific industrial applications must answer the following question: What is the crystalline structure and the atomic configuration that an alloy may exhibit at given temperature and concentration? Usually the answer is sought in the phase-diagram of a relevant system that is often determined experimentally and does not provide insight to the underlying mechanisms driving phase stability. Because of the rather tedious and highly risky nature of developing new materials through conventional metallurgical techniques, a great deal of effort has been expended in...

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