Record Nr. UNINA9910961600803321 Autore Blank V. D. Titolo Phase transitions in solids under high pressure / / V.D. Blank and E.I. Estrin Pubbl/distr/stampa Boca Raton, FL:,: CRC Press,, [2014] ©2014 **ISBN** 1-04-018968-7 0-429-07376-3 1-4665-9425-X Edizione [1st ed.] Descrizione fisica 1 online resource (451 p.) 530.4/14 Disciplina Soggetti Phase transformations (Statistical physics) Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references. Nota di contenuto Front Cover; Contents; Preface; Introduction: Phase equilibria and kinetics of phase transformations at high pressure; Chapter 1: Equipment and methods for the study of phase transformations in solidsat high pressures; Chapter 2: Phase transformations of carbon and boron nitride at high pressure and deformation under pressure; Chapter 3: Phase transitions in Si and Ge at high pressure and deformation under pressure; Chapter 4: Polymorphic -w transformation in titanium, zirconium and zirconium-titanium alloys; Chapter 5: Phase transformations in iron and its alloys at high pressure Chapter 6: Phase transformations in gallium and ceriumChapter 7: On the possible polymorphic transformations in transition metals under pressure: Chapter 8: Pressure-induced polymorphic transformations in AIBVII compounds; Chapter 9: Phase transformations in AIIBVIand AIIIBV semiconductor compounds; Chapter 10: Effect of pressure on the kinetics of phase transformations in iron alloys; Chapter 11: Transformations during deformation at high pressure: Chapter 12: Effects due to phase transformations at high pressure Chapter 13: Kinetics and hysteresis in high-temperature polymorphic transformations under pressureChapter 14: Hysteresis and kinetics of

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Sommario/riassunto

The use of high-pressure techniques has become popular for studying the nature of substances and phenomena occurring in them, especially as a means of obtaining new materials (synthesis under high pressure) and processing known materials (hydroextrusion). A product of many years of research by the authors and their colleagues, Phase Transitions in Solids under High Pressure discusses the relationships of phase transformations in solids under high pressure, the mechanism of these transformations, crystal geometry, the effect of deformation, the conditions of formation, and preservation of the h