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Titolo	Defects and Impurities in Silicon Materials [[electronic resource]] : An Introduction to Atomic-Level Silicon Engineering // edited by Yutaka Yoshida, Guido Langouche
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ISBN	4-431-55800-4
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Descrizione fisica	1 online resource (XV, 487 p. 292 illus., 180 illus. in color.)
Collana	Lecture Notes in Physics, , 0075-8450 ; ; 916
Disciplina	546.683
Soggetti	Semiconductors Nanotechnology Engineering—Materials Solid state physics Nanoscale science Nanoscience Nanostructures Materials Engineering Nanotechnology and Microengineering Solid State Physics Nanoscale Science and Technology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
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Nota di contenuto	Diffusion and point defects in silicon materials -- Density functional modeling of defects and impurities in silicon materials -- Electrical and optical defect evaluation techniques for electronic and solar grade silicon -- Intrinsic point defect engineering during single crystal Si and Ge growth from a melt -- Computer simulation of crystal growth for CZ-Si single crystals and Si solar cells -- Oxygen precipitation in silicon -- Defect characterization by electron beam induced current and cathode luminescence methods -- Nuclear methods to study defects and impurities in Si materials using heavy ion accelerators -- Defect Engineering in silicon materials.
Sommario/riassunto	This book emphasizes the importance of the fascinating atomistic

insights into the defects and the impurities as well as the dynamic behaviors in silicon materials, which have become more directly accessible over the past 20 years. Such progress has been made possible by newly developed experimental methods, first principle theories, and computer simulation techniques. The book is aimed at young researchers, scientists, and technicians in related industries. The main purposes are to provide readers with 1) the basic physics behind defects in silicon materials, 2) the atomistic modeling as well as the characterization techniques related to defects and impurities in silicon materials, and 3) an overview of the wide range of the research fields involved.
