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| Descrizione fisica | 1 online resource (816 p.) |
| Collana | Materials science and process technology series |
| Altri autori (Persone) | O'MaraWilliam C<br>HerringRobert B<br>HuntLee P (Lee Philip) |
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| Soggetti | Semiconductors<br>Silicon crystals |
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| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | ""Preface""; ""Contributors""; ""Contents""; ""1 Silicon Precursors: Their Manufacture and Properties""; ""2 Polysilicon Preparation""; ""3 Crystal Growth of Silicon""; ""4 Silicon Wafer Preparation""; ""5 Silicon Epitaxy""; ""6 Silicon Material Properties""; ""7 Oxygen, Carbon and Nitrogen in Silicon""; ""8 Carrier Lifetimes in Silicon""; ""9 Preparation and Properties of Polycrystalline-Silicon Films""; ""10 Silicon Phase Diagrams""; ""Index"" |
| Sommario/riassunto | This handbook is a comprehensive summary of the science, technology and manufacturing of semiconductor silicon materials. Every known property of silicon is detailed. A complete set of binary phase diagrams is included. Practical aspects such as materials handling, safety, impurity and defect reduction are also discussed in depth. Fundamentals in the areas of silicon precursor compounds, polysilicon, silicon crystal growth, wafer fabrication, epitaxial and CVD deposition are addressed by experts in these fields. Materials properties covered include electrical, optical and mechanical properties, deep level impurities and carrier lifetime, and thermochemistry, as well as specific |

sections on oxygen, carbon, and nitrogen impurities. The book contains an extensive set of references, tables of materials constants, and silicon properties, and a presentation on the state of the art of materials manufacturing.