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Nota di contenuto	Contents; Series Preface; Preface; Acknowledgements; List of Contributors; Abbreviations; 1 Silicon; 1.1 Introduction; 1.2 Crystal-growth method and technology; 1.2.1 High-purity polycrystalline silicon; 1.2.2 CZ-Si growth apparatus and related furnace parts; 1.2.3 CZ-Si crystal growth; 1.2.4 FZ (float-zone) Si crystal growth; 1.2.5 Wafer processing; 1.3 Melt process; 1.3.1 Analysis of heat- and mass-transfer processes; 1.3.2 Oxygen transportation process and mechanism; 1.3.3 Control of oxygen concentration by application of cusp magnetic field; 1.4 Defect and wafer quality 1.4.1 Oxygen precipitation and gettering1.4.2 Grown-in defects; 1.5 Concluding remarks; References; 2 Growth of Gallium Arsenide; 2.1 Introduction; 2.2 Doping considerations; 2.3 Growth techniques; 2.3.1 Horizontal Bridgman and horizontal gradient freeze techniques; 2.3.2 Liquid encapsulated Czochralski (LEC) technique; 2.3.3 Vertical gradient freeze (VGF) technique; 2.4 Crystalline defects in GaAs; 2.4.1 Defects in melt-grown, semi-insulating GaAs; 2.5 Impurity and defect analysis of GaAs (chemical); 2.6 Impurity and defect analysis of GaAs (electrical)

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5.4.1 Challenges

Sommario/riassunto

A valuable, timely book for the crystal growth community, edited by one of the most respected members in the field. Contents cover all the important materials from silicon through the III-V and II-IV compounds to oxides, nitrides, fluorides, carbides and diamondsInternational group of contributors from academia and industry provide a balanced treatmentIncludes global interest with particular relevance to: USA, Canada, UK, France, Germany, Netherlands, Belgium, Italy, Spain, Switzerland, Japan, Korea, Taiwan, China, Australia and South Africa</ul