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Altri autori (Persone)	MurphyJ. David
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Nota di contenuto	Gettering and Defect Engineering in Semiconductor Technology XV; Preface, Committees, Invited Speakers and Sponsor; Table of Contents; I. Defect Engineering in Silicon Solar Cells; Light-Induced Boron-Oxygen Recombination Centres in Silicon: Understanding their Formation and Elimination; Iron Management in Multicrystalline Silicon through Predictive Simulation: Point Defects, Precipitates, and Structural Defect Interactions; External and Internal Gettering of Interstitial Iron in Silicon for Solar Cells; Precipitation of Interstitial Iron in Multicrystalline Silicon Direct Observation of Carrier Trapping Processes on Fe Impurities in mc-Si Solar CellsOn the Trade-Off between Industrially Feasible Silicon Surface Preconditioning Prior to Interface Passivation and Iron Contaminant Removal Effectiveness; II. Structural and Production Issues in Cast Silicon Materials for Solar Cells; Defect Generation and Propagation in Mc-Si Ingots: Influence on the Performance of Solar Cells; Characterisation of Dislocation-Content in Multicrystalline-Silicon Wafers The Impact of Dislocation Structure on Impurity Decoration of Dislocation Clusters in Multicrystalline SiliconAnalysis of

Inhomogeneous Dislocation Distribution in Multicrystalline Si;
 Properties of Strong Luminescence at 0.93 eV in Solar Grade Silicon; 10
 cm Diameter Mono Cast Si Growth and its Characterization;
 Characterization of Residual Strain in Si Ingots Grown by the Seed-Cast
 Method; III. Characterisation of Silicon for Solar Cells; Overview and
 Latest Developments in Photoconductance Lifetime Measurements in
 Silicon
 Efficiency-Limiting Recombination in Multicrystalline Silicon Solar
 CellsPhotoluminescence Imaging of Silicon Bricks; Inline PL Inspection
 and Advanced Offline Evaluation of Passivation Defects, Charge and
 Interfaces; Transition Metal Precipitates in Mc Si: A New Detection
 Method Using 3D-FIB; A Comparison of EBIC, LBIC and XBIC Methods as
 Tools for Multicrystalline Si Characterization; IV. Intrinsic Point Defects
 in Silicon; Properties of Point Defects in Silicon: New Results after a
 Long-Time Debate; Fast and Slow Vacancies in Silicon
 Theoretical Study of the Impact of Stress on the Behavior of Intrinsic
 Point Defects in Large-Diameter Defect-Free Si CrystalsV. Light
 Impurities in Silicon-Based Materials; First Principle Study of the
 Diffusion of Oxygen and Oxygen Complexes in Si, SiGe Solid Solutions
 and Si Nanocrystals; The Trivacancy and Trivacancy-Oxygen Family of
 Defects in Silicon; Monoisotopic ^{28}Si in Spin Resonance Spectroscopy
 of Electrons Localized on Shallow Donors; Light-Element Impurities and
 their Reactions in Multicrystalline Si; Isotope-Dependent Phonon
 Trapping at Defects in Semiconductors
 Formation of Single and Double Donor States of Trivacancy-Oxygen
 Complexes in P-Type Silicon

Sommario/riassunto

The book includes both fundamental and technological aspects of defects in semiconductor materials and devices, including photovoltaics. The 74 papers are grouped as follows: I. Defect engineering in silicon solar cells; II. Structural and production issues in cast silicon materials for solar cells; III. Characterisation of silicon for solar cells; IV. Intrinsic point defects in silicon; V. Light impurities in silicon-based materials; VI. Metals in silicon: fundamental properties and gettering; VII. Extended and implantation-related defects in silicon; VIII. Surfaces, passivation and processin
