

1. Record Nr.	UNINA9910789178803321
Titolo	Gettering and defect engineering in semiconductor technology XV : selected papers from the 15th Gettering and Defect Engineering in Semiconductor Technology Conference (GADEST 2013), September 22-27, 2013, Oxford, UK / / edited by J.D. Murphy
Pubbl/distr/stampa	Durnten-Zurich, Switzerland : , : Trans Tech Publications, , [2014] ©2014
ISBN	3-03826-205-6
Descrizione fisica	1 online resource (513 p.)
Collana	Solid state phenomena ; ; 205-206
Altri autori (Persone)	MurphyJ. David
Disciplina	620.112972
Soggetti	Semiconductors Solid state electronics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
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 Cells
Photoluminescence 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 Crystals
V. 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
