

Table of Contents

Preface

Fundamental Defects in GaAs: Present and Prospective in GaAs Microelectronics Technology

S. Miyazawa 1

Hot Topics: Theory

A.M. Stoneham 9

AB-Initio Theory of Defects in Crystalline and Amorphous Semiconductors

Y. Bar-Yam and J.D. Joannopoulos 19

Chalcogen and Vacancy Pairs in Silicon: Electronic Structure and Stabilities

C.M. Weinert and M. Scheffler 25

Electronic Structures of Substitutional Off-Center and Small-Aggregate Defects in Silicon by Semi-Empirical Green's Function Methods

G.G. DeLeo, W.B. Fowler, G.W. Barry and M. Besson 31

Selfconsistent Tight Binding Theory of Trends for Substitutional Transition Metal Ions in Si and GaAs

C. Delerue, G. Allan and M. Lannoo 37

Tight-Binding Study of the Silicon Divacancy

P. Pecheur and G. Toussaint 43

Electronic Structure of Cationic Substitutional Cu, Ag, Au, and the Metal Vacancy in ZnS, ZnSe and CdTe

H. Chacham, J.L. Alves and M.L. de Siqueira 49

Theoretical Model of Transition Metal-Shallow Acceptor Impurity Pairs in Silicon

L.V.C. Assali and J.R. Leite 55

Calculation of the Spin-Polarized Electronic Structure of Si: Fe⁰_i in Super-Cell Full-Potential Linearized Augmented Plane Wave Method

H. Katayama-Yoshida and N. Hamada 61

Tight Binding Calculations of Optical Cross Sections for Deep Level Defects in Semiconductors

J. Petit, G. Allan and M. Lannoo 67

Accurate Prediction of Lattice Distortion for Complex Defects in Semiconductors: Extended Interstitials as Tests of Valence Force Potentials

V.J.B. Torres, P.M. Masri and A.M. Stoneham 73

Effects of Doping and Alloying on Native Defects and Complex Formation in Hg_{1-x}Cd_xTe

C.G. Morgan-Pond 79

The Electronic States of a Substitutional Ytterbium Impurity in Indium Phosphide

L.A. Hemstreet 85

Defect Calculations in a Modified Haldane-Anderson Model

W.B. Fowler 91

Electronic Structure of Neutral Complex Defects in Silicon

B. Monemar, U. Lindefelt, W.M. Chen, Q.X. Zhao and H. Weman 97

High Temperature Investigations of Silicon by Means of Positron Annihilation

S. Dannefaer 103

Theoretical Determination of the Vacancy Migration Energy in Silicon

P.J. Kelly, R. Car and S.T. Pantelides 115

Diffusion without Vacancies or Interstitials: A New Concerted Exchange Mechanism

K. Pandey 121

Germanium Impurity Diffusion in Boron Doped Silicon

A.L. Bouchetout, N. Tabet and C.J.A. Monty 127

Diffusion of Tellurium in Silicon

N. Stolwijk, F. Rollert, D. Grünebaum, H. Mehrer and G. Weyer 133

Behaviour of Substitutional Gold in Silicon

M. Yoshida, M. Morooka and H. Tomokage 139

Nature and Generation Mechanism of Butterfly-Type Intrinsic Gettering Centers in Oxygen-Free Silicon Crystals	145
O. Ueda, K. Nauka, J. Lagowski and H.C. Gatos	
Distribution of Cobalt in Silicon after Phosphorous Diffusion Gettering	151
R. Kühnapfel, W. Schröter and D. Gilles	
Transient Defects Kinetics during Silicon Oxidation and Diffusion Phenomena	157
D. Mathiot	
Migration of Interstitial Boron in Silicon	163
R.D. Harris, G.D. Watkins and L.C. Kimerling	
Solubility, Diffusion and Ion-Pairing of Cobalt in Extrinsic Silicon at 700°C	169
D. Gilles and W. Schröter	
Diffusion and Conductivity of Potassium Impurity in Silicon and Germanium	175
L.T. Ho	
An Overview of Electron Paramagnetic Resonance Studies of Si-SiO₂ Interface States	181
K.L. Brower	
Manganese Luminescence in GaAs/GaAlAs Superlattices	189
B. Plot, B. Deveaud, B. Lambert, A. Chomette and A. Regreny	
Capacitance and Current Spectroscopy of Perpendicular Transport in Compensated GaAs-GaAlAs Superlattices	193
H. Sibille, J.F. Palmier and H. Le Person	
Characterization of Electron Traps in GaAs-GaAlAs Superlattices	199
F. Sillion, A. Mauger, J.C. Bourgoin, B. Deveaud, A. Regreny and D. Stiévenard	
Defect Generation in the Initial Stages of Epitaxial Growth of GaAs on Silicon by MBE	205
F.A. Ponce, D.K. Biegelsen, J.C. Tramontana and A.J. Smith	
Atomic Imaging of Surface Defects on Si	211
J.E. Demuth, R.J. Hamers and R.M. Tromp	
Influence of Strain on Silicon Surface and Silicon Oxide Interface Reconstruction	217
A. Ourmazd, D.W. Taylor, J. Bevk, B.A. Davidson, L.C. Feldman and J.P. Mannaerts	
Deep Level at Semiconductor Surfaces	223
W. Platen, D. Kohl, K.A. Brauchle and K. Wolter	
Charged Defect States at Silicon Grain Boundaries	229
F.J. Stützler, L. Tapfer and H.J. Queisser	
Bulk and Grain Boundary Defects in Polycrystalline ZnO	235
F. Greuter, G. Blatter, M. Rossinelli and F. Schmückle	
The Role of Defect Production at Surface and Interface of CdHgTe and ZnHgTe	241
T. Taguchi, T. Terada, O. Ohno, T. Sasaki, M. Suita and A. Hiraki	
Electronic Structure of As and P Antisite Defects and Ga Vacancy in GaP and GaAs	247
S. Biernacki	
EPR Spectra of AsGa Aggregates in GaAs	253
E. Kaczmarek	
Endor-Investigation of the Ga Vacancy in GaP	259
J. Hage, J. Niklas and J.M. Spaeth	
Characterization of Vacancy Defects in As-Grown and Electron Irradiated GaAs by Positron Annihilation	265
M. Stucky, C. Corbel, B. Geffroy, P. Moser and P.J. Hautojärvi	
Triplet Spin ODMR from Phosphorous Antisites in Undoped InP	271
T.A. Kennedy, N.D. Wilsey, P.B. Klein and R.L. Henry	
Electronic Structure and Positron States at Vacancies in Semiconductors	277
M.J. Puska	
Search for the Full Atomic Structure of El₂ in GaAs	283
T.A. Kennedy	
Bistability and Metastability of V_{Ga} in GaAs	293
G.A. Baraff and M. Schluter	
EPR Observation of the Arsenic Antisite - Arsenic Vacancy Complex	299
H.J. von Bardeleben, J.C. Bourgoin and A. Miret	
A Model for the Atomic Configuration of the EL2 Defect in GaAs	305
D. Stiévenard, H.J. von Bardeleben, J.C. Bourgoin and A.M. Huber	

The Arsenic Antisite Defect in GaAs and Its Relation to EL2	311
B.K. Meyer, D.M. Hofmann and J.M. Spaeth	
Observation of New EL2 Related Properties in GaAs. Photodissociation Model of EL2 Metastability	
W. Kuszko, P.J. Walczak, P. Trautman, M. Kaminska and J.M. Baranowski	317
Optical Transition Mechanisms via Excited State and a New Configuration Coordinate Model for EL2 in GaAs	
Y. Mochizuki and T. Ikoma	323
The Energy Position of the EL2 Ground State in GaAs	
P. Omling, P. Silverberg and L. Samuelson	329
EL2 Characteristics of In-Doped Vapor Phase Epitaxy GaAs Layers	
M. Lopez, E. Abril, B. Jimenez, M. Aguilar and E. Muñoz Merino	335
As_{Ga}-As_i-As_{Ga} Complex as a Model of EL2 Centre in GaAs	
T. Figielksi	341
Optically-Assisted Thermal Anneal of Metastable Defects in GaAs	
J.C. Parker and R. Bray	347
Resonant Raman Scattering at Point Defects in GaAs	
M. Scheffler and U. Scherz	353
Infrared Investigations of Persistent Carriers, Photo-Generated during EL2 Bleaching in GaAs	
B. Dischler, F. Fuchs and U. Kaufmann	359
ESR Studies of Semi-Insulating GaAs Crystals	
J. Bittebierre, R.T. Cox and E. Molva	365
EL2 Quenching Behaviour in Infrared GaAs Transmission Images	
M. Castagne, J.P. Fillard, J. Bonnafé and P. Gall	371
Introduction to Metastability: Configuration Coordinate Diagrams	
G.A. Baraff	377
Trends in the Bistable Properties of Iron-Acceptor Pairs in Silicon	
A. Chantre and L.C. Kimerling	387
Metastable States of the DX Center in Al_xGa_{1-x}As	
T.N. Theis	393
Environmental Effects in DX (Te) Centers in GaAlAs	
L. Dobaczewski and J.M. Langer	399
Trapping Characteristics of the Dual States of the D-X Center in MBE Grown Si-Doped AlGaAs	
S.V. Subramanian, B.M. Arora, Y.N. Mahopatra and V. Kumar	405
Trapping Characteristics and Analysis of Te-Related DX Centers in AlGaAs and GaAsP	
E. Muñoz Merino, A. Gómez, E. Calleja, J.J. Criado, J.M. Herrero and F. Sandoval	411
Effect of the Host Band Structure on Capture and Emission Processes at DX Centers in AlGaAs	
P.M. Mooney, E. Calleja, S.L. Wright and M. Heiblum	417
The Ge-Related DX Level in Sn/Ge-Doped Al_xGa_{1-x}As Hetero-Junctions Grown by LPE	
P. Krispin and J. Maege	423
A New Model of Deep Donor Centers in Al_xGa_{1-x}As	
J.C.M. Henning and J.P.M. Ansems	429
Optical Nuclear Polarization and Spin-Dependent Reactions in Semiconductors	
N.T. Bagraev and V.A. Mashkov	435
Evidence of "Coherent" Recombination on a Deep Center from Recombination Enhanced Defect Reactions	
A. Sibille	445
Multiphonon Recombination by Bourgoin-Corbett Mechanism	
T. Markvart	451
Uniaxial Stress DLTS of Iron-Acceptor Pairs in Silicon	
D.D. Nolte and E.E. Haller	457
On the Behaviour of Hole Capture with Multiphonon Emission at Deep Level Defects H3 and H4 in p-GaAs	
P.A. Murawala, D. Stiévenard, J.C. Bourgoin and M. Lannoo	463

Stress Effects of Deep Centers in Si, New Method to Determine Old Parameter Ξ_μ M.F. Li, J.X. Chen, X.S. Zhao and Y.J. Li	469
Cathodoluminescence Contrast from Localized Defects in Semiconductors A. Jakubowicz	475
A Study of Electron Capture Cross Sections of A-Center and Gold Acceptor in Silicon under Uniaxial Stress J. Mou, X. Yao and G. Qin	481
Transition Metal Impurities-Induced Nonradiative Recombination Processes in the ZnS Lattice M. Godlewski, A.J. Zakrzewski and M.Z. Cieplak	487
Zero-Phonon Line of Deep-Level Luminescence in GaAs M. Tajima	493
Accurate Determination of Capture Time Constant of Interface States in MOS Structures D. Vuillaume, J. Barrier, D. Stiévenard and J.C. Bourgoin	499
Application of Optically Detected Magnetic Resonance to the Characterization of Point Defects in Semiconductors J.M. Spaeth	505
Constant Photo-EPR: A New Method for Deep Level Characterization W. Jantsch, G. Brunthaler and G. Hendorfer	515
Characterization of Deep Levels by Microwave Absorption Spectroscopy G. Ferenczi, D.L. Huber, W. Jantsch and G. Brunthaler	521
Profiling of Vacancy Defects in Ion-Implanted Si by Slow Positron Beam P.J. Hautojärvi, H. Huomo, J. Lahtinen and J. Mäkinen	527
Analysis of the Electric Field Influence on the Emission Rate of the Te-Related Center in $\text{GaAs}_{0.6}\text{P}_{0.4}$ J.R. Morante, P. Roura, A. Pérez-Rodríguez, J. Samitier, A. Cornet and A. Herms	533
Optical Isothermal Transient Spectroscopy: Application to the Boron Implantation in GaAs J. Samitier, J.R. Morante, A. Cornet, A. Herms, P. Roura and A. Pérez-Rodríguez	539
Scanning Transmission Electron Beam Induced Current in Polycrystalline Silicon C. Cabanel, J.L. Maurice and J.Y. Laval	545
On the Formation of ^{111}In-Donor Atom Pairs in Silicon as Observed by PAC T. Wichert, M. Swanson and A.F. Quenneville	551
Acceptor-Donor-Interactions in Silicon Studied by the Pac-Method D. Forkel-Wirth, H. Foettinger, M. Iwatschenko-Borho, S. Malzer, F. Meyer, W. Witthuhn and H. Wolf	557
Hydrogen Behavior and Hydrogen-Related Defects in Single Crystal Silicon G. Qin, Y. Du, J. Wu and X. Yao	563
Hydrogen Diffusion and Hydrogen-Dopant Reactions in Crystalline Silicon S.T. Pantelides	573
Photoluminescence Detection of the Shallow Impurity Neutralization in GaAs J. Weber, F. Bantien, S.J. Pearton and W.C. Dautremont-Smith	579
Selective Hydrogen Passivation of Oxygen-Related Thermal-Donor Clusters in Silicon N.M. Johnson, S.K. Hahn and H.J. Stein	585
Correlation between Hydrogen Diffusion and Donor Neutralization in Hydrogenated n-GaAs: Si J. Chevallier, A. Jalil, R. Azoulay and A. Mircea	591
In Studies of the Electron-Irradiated Silicon Crystal Grown in Hydrogen Atmosphere T.S. Shi, G.R. Bai, M.W. Qi and J. Zhou	597
The Optical Cross-Section of 3d Impurity Induced Transitions in III-V and II-VI Semiconductors G. Martinez	603
Transition-Metal Luminescence in III-V Alloys S. Nilsson and L. Samuelson	615
The Importance of Random Strain in Deep Level Jahn-Teller Systems Studied by TD-EPR C.A. Bates, J.L. Dunn, J. Handley, A.F. Labadz, M. Darcha, M.E.-. Naqadi and A.M. Vasson	621
Identification of the Co^{1+} Double Acceptor State in GaAs D. Wasik and M. Baj	627

Spectroscopy of GaAs and InP Grown in the Presence of Rare Earth Elements	633
A. Stapor, J. Raczynska, H. Przybylinska, A. Sienkiewicz, K. Fronc and J.M. Langer	
Vanadium in GaAs and GaP	639
W. Ulrici, L. Eaves, K. Friedland, D.P. Halliday and J. Kreissl	
Properties of Titanium in GaAs and InP	645
A.M. Hennel, C.D. Brandt, K.Y. Ko and L.M. Pawlowicz	
Study of Transition Metal Deep Donor Levels in InP	651
B. Lambert, Y. Toudic, R. Coquille, G. Grandpierre and M. Gauneau	
The Donor Level Ti³⁺/Ti⁴⁺ in InP: Electrical and Optical Properties	657
G. Bremond, G. Guillot, A. Nouailhat, B. Lambert, Y. Toudic, M. Gauneau and B. Deveaud	
Study of the Cr²⁺ Luminescence in GaAs as a Function of Hydrostatic Pressure	663
M. Zigone, H. Roux-Buisson and G. Martinez	
Optical, Electrical and EPR Studies of GaAs:Ni	669
W. Ulrici, L. Eaves, K. Friedland, D.P. Halliday, J. Kreissl and B. Ulrici	
The Luminescence at 0.844 eV in GaAs:Cr - A Zeeman Spectroscopy	675
V. Thomas, J.J. Barrau, G. Armelles, B. Deveaud and B. Lambert	
Optical Detection of Magnetic Resonance in the Optically Excited $^2F_{5/2}$-State of Yb³⁺ in InP	681
R. Kallenbach, H.J. Reyher, J. Unruh, A. Winnacker and H. Ennen	
On the Evidence for the Effect of Local Symmetry on the Photoionization Spectrum of Fe²⁺ in InP	687
P. Motisuke, F. Iikawa, M.J. Caldas, A. Fazzio and J.R. Pereira Neto	
Non-Stationary Infrared-Optical Processes Involving Deep Impurities in III-V Compound Semiconductors	693
J.H. Crasemann and H.-. Schulz	
Optically-Detected Magnetic Resonance of Gold Centres in Zinc Selenide	699
N.R.J. Poolton, J.E. Nicholls, J.J. Davies and B.J. Fitzpatrick	
Structure of Pd, Pt and Au Impurities in Silicon: The Energy Levels under Uniaxial Stress and Hydrostatic Pressure	705
W. Stöffler and J. Weber	
Interstitial 3d Transition Metal Impurities in Silicon: An Ab Initio Cluster Study	711
G. Aissing, R. Broer, W.C. Nieuwpoort and L.F. Feiner	
Photoluminescence Studies on Gallium-Related Defects in Silicon	717
K. Thonke, U. Schall, R. Sauer and N. Bürger	
Identification of the Energy Levels of Si:Pd by DLTS	723
J. Zhou, S.Y. Ruan, H. Hong and W.K. Ge	
Electrons of 3d Transition Metals in Silicon	729
E.G. Sieverts, D.A. Van Wezep, R. Van Kemp and C.A.J. Ammerlaan	
High Resolution Transmission Electron Microscopy of Semiconductors and Their Defects	735
A. Ourmazd	
Classification of Defects in Plastically Deformed Silicon	745
C. Kisielowski-Kemmerich, J. Czaschke and H. Alexander	
The Growth Mechanism of Dislocation Loops in Arsenic Implanted Silicon	751
K.S. Jones, S. Prussin and E.R. Weber	
The Role of Point Defects in the Nucleation of Film Edge Induced Dislocations in Silicon	757
J. Vanhellemont, C. Claeys and J. Van Landuyt	
Structural Features in the Photoluminescence from Widely Dissociated Straight Partial Dislocations in Silicon	763
R. Sauer, H. Alexander and C. Kisielowski-Kemmerich	
Defect-Related Luminescence in Molecular Beam Epitaxy Grown CdTe Films*	769
W.J. Choyke, M.G. Burke, Z.C. Feng, M. Hanes and A. Mascarenhas	
Structure of Dislocations in Plastically-Deformed, High Purity GaAs	775
F.A. Ponce, G.B. Anderson, P. Haasen and H.-. Brion	
Dislocation Substructures and Plasticity of GaAs below 400°C as a Function of Doping	781
P. Boivin, J. Rabier and H. Garem	
The Electrical Activity of Dislocation Slip Planes in Semiconductor Crystals	787
E.B. Yakimov, I.E. Bondarenko and N. Yarykin	

TEM Observation of Dislocations in In Doped GaAs after High Temperature Plastic Deformation	791
M. Jiménez-Melendo, A. Djemel, J.P. Riviere and J. Castaing	
Dislocations in Plastically Deformed GaAs:Cr Thermal Conductivity Measurements	797
J. Jouglar and P.L. Vuillermoz	
Glide of α and β Dislocations in GaAs	803
G. Feuillet and D. Cherns	
Plasticity of Cd_{0.66} Hg_{0.34} Te TEM Observations of Dislocations	809
J.F. Barbot, G. Rivaud and J.C. Desoyer	
Dangling Bonds in a Dislocation Core in Ge. Do They Exist?	815
B. Pohoryles	
On the Mobility of 1/6 (112) Partial Dislocations under High Stress in Semi-Insulating GaAs	821
Y. Androussi, P. François, J. Di Persio, G. Vanderschaeve and A. Lefebvre	
ODMR Observation of Close Frenkel Pairs in Electron-Irradiated ZnSe	827
F.C. Rong and G.D. Watkins	
Electrical Compensation, Electron and Hole Traps in Electron Irradiated ZnSe	833
A. Heurtel, R. Legros, Y. Marfaing and R. Triboulet	
Radiation Damage Experiments with ZnO at Low Temperatures	839
G. Pazionis and H.-. Schulz	
Saturation Spectroscopy and Fluorescence in ZnO:Co²⁺	845
R.M. Macfarlane and J.C. Viala	
ODMR-MCD Study of the Zinc Vacancy and Related Complexes in ZnSe	851
D.Y. Jeon, H.P. Gislason and G.D. Watkins	
Photoluminescence Spectroscopy of Proton Implantation Induced Defects in CdTe and ZnTe	857
L. Svob and Y. Marfaing	
Acceptors and Donors in the Wide-Gap Semiconductors ZnO and SnO₂	863
H. Wolf, S. Deubler, D. Forkel-Wirth, H. Foettinger, M. Iwatschenko-Borho, F. Meyer, M. Renn, W. Witthuhn and R. Helbig	
On the Influence of Doping and Annealing on Oxygen-Related Defects in Silicon	869
P. Mascher, S. Dannefaer, D. Kerr and S.K. Hahn	
The Electronic Structure of the Oxygen-Vacancy Complex in Silicon	875
R. Van Kemp, E.G. Sieverts and C.A.J. Ammerlaan	
Influence of Oxygen Precipitates on the Solution of Transition Metals in Silicon	881
E.G. Colas, E.R. Weber and R. Hull	
Enhanced Oxygen Diffusion in Silicon at Low Temperatures	887
A.K. Tipping, R.C. Newman, D.C. Newton and J.H. Tucker	
The 3942 cm⁻¹ Optical Band in Irradiated Crystalline Silicon	893
G. Davies, E.C. Lightowers, M. Stavola, K. Bergman and B.G. Svensson	
N-Concentration Dependence of Thermal Annealing Behavior of Substitutional N Impurities in Pulsed-Laser Annealed Silicon	899
H. Itoh, K. Murakami, K. Takita and K. Masuda	
Theoretical Investigation of Deep Level Complexes Related to Carbon and Oxygen Impurities in Silicon	905
V.M.S. Gomes and J.R. Leite	
Chalcogen Double Donors in Silicon	911
G. Pensl, G. Roos, C. Holm and P. Wagner	
The Ultraviolet Absorption due to Single Substitutional Nitrogen in Diamond	917
M.H. Nazaré	
The ESR Investigation of a Singly Ionized Sulphur Centre in Ib Diamonds	923
J.A. Van Wyk and J.H.N. Loubser	
Electronic and Vibrational Absorption of Interstitial Carbon in Silicon	929
R. Woolley, E.C. Lightowers, A.K. Tipping, M. Claybourn and R.C. Newman	
Ion-Implanted Oxygen Isotopes in Silicon	935
H.J. Stein	
Far-IR Spectroscopy of Oxygen Donors in Germanium	941
P. Clauws and J. Vennik	

Identification of the Carbon Associated Radiation Damage Levels in Silicon	947
G. Ferenczi, C.A. Londos, T. Pavelka, M. Somogyi and A. Mertens	
Thermal Donors in Silicon - 1986	953
G.D. Watkins	
Preferential Alignment of Thermal Donors in Si	961
P. Wagner, H. Gottschalck, J.M. Trombetta and G.D. Watkins	
Time Resolved Study of Thermal Donor Related Luminescence Lines in Silicon	967
A. Dörnen and A. Hangleiter	
Effects of 450°C Thermal Annealing Upon Oxygen Precipitation in B-Doped CZ Si Wafers	973
S.K. Hahn, S. Shatas, H.J. Stein, M. Arst, D.K. Sadana, Z.U. Rek and V. Stojanoff	
Evidence for an Inhomogeneous Distribution of Thermal Donors in Silicon from Electrical and Optical Measurements	979
J. Weber, K. Köhler, F.J. Stützler and H.J. Queisser	
The New Donors in Silicon: The Effect of the Inversion Layers Surrounding Precipitates	985
A. Henry, J.L. Pautrat and K. Saminadayar	
Early Stage of the New Donors Formation in Cz-Silicon	991
P. Vendange, A. Henry, K. Saminadayar, N. Magnea and J.L. Pautrat	
Properties of the Shallow Thermal Donors in CZ-Silicon as Studied by Photothermal Ionization Spectroscopy (PTIS)	997
J.A. Griffin, H. Navarro, J. Weber and L. Genzel	
Electronic Properties of Deep Level Defects in Thermally Annealed CZ Silicon	1003
S. Matsumoto, H. Kaneko and T. Sasao	
Oxygen Endor of Thermal Donors in Silicon	1009
D.A. Van Wezep, T. Gregorkiewicz, H.H.P.T. Bekman and C.A.J. Ammerlaan	
A Model for the Density of Oxidation Induced Stacking Faults in Silicon	1015
F.G. Kuper, J.T.M. de Hosson and J.F. Verwey	
Enhanced Oxygen Diffusion in Silicon at Thermal Donor Formation Temperature	1021
S.T. Lee and P. Fellinger	
Radiative Defects in Electron Irradiated InP	1027
A. Constant and B.W. Wessels	
Thermal Transformation of the Electron-Irradiation-Induced Defect H₄ in p Type InP	1033
T. Bretagnon, G. Bastide and M. Rouzeyre	
Study of Electron Irradiation-Induced Defects in N-Type Active Layer of GaAs Mesfet	1039
F.M. Wu, Q.J. Lai, L. Xu, B.R. Gong and X.M. Zhou	
Electron Microscope Observation of Highly Disordered Regions in Neutron Irradiated Germanium	1045
M. Kiritani and M. Hirata	
Climbing of Nearly Screw Dislocations in InSb Thin Foils Irradiated in a High Voltage Electron Microscope	1051
B. Legros-de Mauduit, M. Fnaiech and F. Reynaud	
Comparison of Electron Paramagnetic Resonance and Transport Data during Thermal Recovery of Fast Neutron Irradiated GaAs	1057
A. Goltzene, B. Meyer and C. Schwab	
Endor Study of Radiation Induced Defects in Semi-Insulating GaP	1063
R.J. Gurbiel, B.M. Hoffman and B.W. Wessels	
Low Temperature Electron Irradiation Induced Defects in N-GaSb	1069
P.A. Murawala, B.M. Arora and S.S. Chandvankar	
Electron Hopping between Bombardment Induced Defects in Gallium Arsenide	1075
S. Makram-Ebeid and P. Boher	
Ga Antisite Defects in Neutron Irradiated and Annealed GaAs?	1081
J.D. Collins, G.A. Gledhill and R.C. Newman	
Annealing of Irradiated Highly Phosphorous-Doped Czochralski Silicon	1087
B.G. Svensson and J.L. Lindström	
Cu-Related Deep Levels in Si and the Interaction between Cu and Irradiation Defects	1093
K. Chen and G. Qin	
Subthreshold Radiation Damage in Silicon: Carbon Isotope Measurements on C_s-Si_I-C_s Complexes	1099
L.T. Canham and E.C. Lightowers	

Experimental Study of Divacancy in Silicon	1105
J. Tatarkiewicz and R. Iwanowski	
New Impurity-Defect Reactions in Silicon	1111
A. Chantre, J.L. Benton, M.T. Asom and L.C. Kimerling	
Photoluminescence Study of Fe²⁺ in InP_{1-x}As_x:Fe Alloys	1117
P.B. Klein, S.G. Bishop, R.L. Henry, A.M. Kriman and N.D. Wilsey	
Electron Microscopy Data for Threshold Energy of Point Defect Creation in Silicon	1123
L.I. Fedina, A.L. Aseev, S.G. Denisenko and L.S. Smirnov	
Beam-Induced Annealing of Defects Created by Implantation at 30 K in Si	1129
B.B. Nielsen and J.U. Andersen	
Annealing Behaviour of High Concentration of Sn and Sb Implanted in Silicon	1135
G. Weyer, A. Nylandsted-Larsen, F.T. Pedersen, R. Galloni and R. Rizzoli	
Structural Defects in Ion-Implanted Silicon Observed by Perturbed Angular Correlation	1141
M. Deicher, G. Grübel, E. Recknagel and T. Wichert	
Defects Related to Nitrogen Implantation in Silicon Single Crystals	1147
M. Bode, A. Jakubowicz and H.U. Habermeier	
Precipitate Morphologies in Oxygen - Ion Implanted Silicon: A High Resolution Electron Microscopy Study	1153
G. Vanderschaeve, R.W. Carpenter, J.C. Barry, C.J. Varker and S.R. Wilson	
Dose Dependence of Defects in Silicon Produced by High Dose, High Temperature O⁺ Implantation	1159
A. Hobbs, R.C. Barklie, K.J. Reeson and P.L.F. Hemment	
Investigation of the Lattice Defects in P Ion Implanted Silicon	1165
H. Bender, D. Avau, W. Vandervorst, J. Van Landuyt and H.E. Maes	
Interaction of Point Defects with Implanted Hydrogen in Undoped Germanium	1171
K. Ito, I. Baba, K. Mizuno and T. Ito	
Evolution of Defect Structures around Te Implanted in GaAs during Solid Phase Epitaxial Regrowth	1177
D. Schroyen, P. Hendrickx and G. Langouche	
As-Implanted Lattice Sites of Dopants in Semiconductors	1183
H. Hofssäss, G. Lindner, S. Winter, B. Besold, E. Recknagel, G. Weyer and J.W. Petersen	
Defect Structures in Ion-Implanted InSb	1189
G. Weyer, H. Grann and F.T. Pedersen	
Defects and Optically Active Transition and Rare Earth Elements in III-V and II-VI Semiconductors and Diamond	1195
A.A. Gippius, V. Vavilov, V.V. Ushakov, V.M. Konnov, N.A. Rzakuliev, S.A. Kazarian, A.A. Shirokov and V.N. Jakimkin	
Zn-Impurity-Induced Structural Disorder in AlGaAs Alloy	1201
T. Kamijoh, A. Hashimoto, N. Watanabe and M. Sakuta	
Study of Deep Levels in Al_yGa_xIn_{1-x-y}P Material Grown by Movpe	1207
E. Dupont-Nivet, J.N. Patillon, J.P. Andre and G.M. Martin	
Effects of Annealing on Electron Trap and Free Carrier Concentration in n-Type GaAs	1213
C. Ghezzi, E. Gombia and L. Vanzetti	
Donor Identification in Bulk Gallium Arsenide	1219
T.D. Harris and M.S. Skolnick	
Observation of Stoichiometry Changes Beneath Metal Contacts on GaAs	1223
Z. Liliental-Weber, E.R. Weber, N. Newman, W.E. Spicer, R. Gronsky and J. Washburn	
Photoluminescence Studies near Residual Dislocations in In-Alloyed GaAs	1229
P. Bunod, E. Molva, A. Chabli, F. Bertin, J. Blétry and L.S. Dang	
Spatial Distribution of Point Defects and Complexes in Semi-Insulating LEC and Si-Doped GF Grown GaAs Crystals	1235
J.A. Mareš, J. Oswald and J. Pastrňák	
Detection of Non Stoichiometric Vacancy Defects in CdTe, HgTe and Hg_{1-x}Cd_xTe by Positron Annihilation	1241
B. Geffroy, C. Corbel, M. Stucky, R. Triboulet, P.J. Hautojärvi, F. Plazaola, K. Saarinen, H. Rajainmäki, J. Aaltonen, P. Moser, A. Sengupta and J.L. Pautrat	
Native Defects in β-Sic	1247
P.J. Lin-Chung and Y.Z. Li	

Photoluminescence of Defects Produced by Reactive Ion Etching of Silicon	
G.A. Northrop and G.S. Oehrlein	1253
Semi-Insulating Behavior in Undoped LEC InP after Annealing in Phosphorous	
P.B. Klein, R.L. Henry, T.A. Kennedy and N.D. Wilsey	1259
Radiative Recombination Mechanism of Deep Levels in GaAs	
M. Tajima, H. Tanino and K. Ishida	1265