

CONTENTS

I.	IMPLANTATION MODIFICATION OF SUPERCONDUCTIVITY	
	Superconductivity of Palladium and Pd-Alloys Charged with H or D by Ion Implantation at Helium Temperatures	3
	W. Buckel, B. Stritzker	
	Ion Implantation in Superconducting Thin Films . . .	15
	O. Meyer, H. Mann, E. Phrilingos	
	Ion Implantation in Superconducting Niobium Thin Films	27
	P. Crozat, R. Adde, J. Chaumont, H. Bernas, D. Zenatti	
	Superconducting Properties of the Dilute Magnetic Alloys Pb-Mn, Sn-Mn and Hg-Mn Obtained by Ion Implantation	35
	W. Buckel, G. Heim	
	Ion Irradiation and Flux Pinning in Type II Superconductors	47
	Herbert C. Freyhardt, Anthony Taylor, Benny A. Loomis	
II.	ION INDUCED SURFACE REACTIONS	
	The Use of Ion Beams in Corrosion Science	63
	G. Dearnaley	
	The Effects of Ion Bombardment on the Thin Film Oxidation Behavior of Zircaloy-4 and Zr-1.0 Nb . . .	87
	J. A. Spitznagel, L. R. Fleischer, W. J. Choyke	
	Ion Implantation and Backscattering from Oxidized Single-Crystal Copper	101
	J. Rickards, G. Dearnaley	

	Movement of Ions During the Anodic Oxidation of Aluminum	111
	W. D. Mackintosh, F. Brown	
	Friction and Wear of Ion Implanted Metals	123
	N. E. W. Hartley, G. Dearnaley, J. F. Turner, J. Saunders	
III.	THIN FILMS AND INTERFACES	
	Ion Beam Studies of Metal-Metal and Metal-Semiconductor Reactions	141
	J. W. Mayer	
	Rutherford Scattering Studies of Diffusion in Thin Multilayer Metal Films	147
	W. J. DeBonte, J. M. Poate, C. M. Melliar-Smith, R. A. Levesque	
	Analysis of Compound Formation in Au-Al Thin Films	159
	S. U. Campisano, G. Foti, F. Grasso, J. W. Mayer, E. Rimini	
	Thin Film Interdiffusion of Chromium and Copper	169
	J. E. E. Baglin, V. Brusic, E. Alessandrini, J. F. Ziegler	
	Ion Backscattering Study of WSi_2 Layer Growth in Sputtered W Contacts on Silicon	179
	J. A. Borders, J. N. Sweet	
	Reactions of Thin Metal Films with Si or SiO_2 Substrates	193
	H. Kräutle, W. K. Chu, M-A. Nicolet, J. W. Mayer, K. N. Tu	
	Ion Beam Induced Intermixing in the Pd/Si System	209
	W. F. van der Weg, D. Sigurd, J. W. Mayer	
IV.	ALLOYING AND MIGRATION IN HIGH FLUENCE IMPLANTS	
	Precipitation During Ion Bombardment of Metals	221
	R. S. Nelson	
	Radiation Damage and Ion Behavior in Ion Implanted Vanadium and Nickel Single Crystals	241
	M. Gettings, K. G. Langguth, G. Linker	

	Sb-Implanted Al Studied by Ion Backscattering and Electron Microscopy	257
	G. J. Thomas, S. T. Picraux	
	The Changes in Electrical Properties of Tantalum Thin Films Following Ion Bombardment	269
	I. H. Wilson, K. H. Goh, K. G. Stephens	
	Implantation and Diffusion of Au in Be: Behavior During Annealing of a Low-Solubility Implant	283
	S. M. Myers, R. A. Langley	
	Anomalous Room Temperature Diffusion of Ion-Injected Ni in Zn Targets	295
	H. J. Smith, G. N. Van Wyk	
	Study of Li-6 Implanted into Niobium	307
	J. P. Biersack, D. Fink	
V.	IMPLANTED ATOM LOCATION	
	Lattice Location of Impurities Implanted into Metals	317
	H. de Waard, L. C. Feldman	
	High Substitutional Fractions in Cold Implantations of Xe and Te in Iron as Shown by Mössbauer Effect Measurements	353
	S. A. Drentje, S. R. Reintsema, G. N. Kalkman	
	Valence Determination and Lattice Location via Mössbauer Spectroscopy of Gd^{151} Implanted into Iron	361
	R. L. Cohen, G. Beyer, B. I. Deutch	
	Combined Lattice Location and Hyperfine Field Study of Yb Implanted into Fe	365
	R. B. Alexander, E. J. Ansaldo, B. I. Deutch, J. Gellert, L. C. Feldman	
	Effect of Radiation Damage on Lattice Location and Hyperfine Interactions of Impurities Implanted in Iron	377
	F. Abel, H. Bernas, M. Bruneaux, J. Chaumont, C. Cohen, L. Thome	

Determination of Unique Site Population in Various In Implanted Non-Cubic Metals using Angular Correlations and the Nuclear Electric Quadrupole Interaction	379
E. N. Kaufmann, P. Raghavan, R. S. Raghavan, K. Krien, E. J. Ansaldo, R. A. Naumann	
The Location of Displaced Manganese and Silver Atoms in Irradiated Aluminum Crystals by Backscattering	393
M. L. Swanson, F. Maury, A. F. Quenneville	
Lattice Location Studies of ^2D and ^3He in W	407
S. T. Picraux, F. L. Vook	
Location of He Atoms in a Metal Vacancy	423
C. L. Bisson, W. D. Wilson	
Simulation of Inert Gas Interstitial Atoms in Tungsten	427
Don E. Harrison, Jr., G. L. Vine, J. A. Tankovich, R. D. Williams, III	
VI. ION LATTICE DAMAGE	
Ion Damage Effects in Metals as Studied by Transmission Electron Microscopy	441
M. Wilkens	
Transmission Electron Microscopy Study of Implantation Induced Defects in Gold	459
M. O. Ruault, B. Jouffrey, J. Chaumont, H. Bernas	
Transmission Electron Microscope Studies of Defect Clusters in Aluminium Irradiated with Gold Ions	469
C. Gómez-Giráldez, B. Hertel, M. Rühle, M. Wilkens	
Dechanneling from Damage Clusters in Heavy Ion Irradiated Gold	481
P. P. Pronko, K. L. Merkle	
Heavy Ion Damage in Thin Metal Films	495
W. Kesternich, K. L. Merkle	

Formation of Interstitial Agglomerates and Gas Bubbles in Cubic Metals Irradiated with 5 keV Argon Ions	507
B. Hertel, J. Diehl, R. Gotthardt, H. Sultze	
Observation of Ion Bombardment Damage in a Ni (100) Crystal by Helium Ion Injection	521
E. V. Kornelsen, D. E. Edwards, Jr.	
VII. ION IMPLANTED GAS BUILDUP	
Helium Implantation Effects in Vanadium and Niobium	533
G. J. Thomas, W. Bauer	
Effect of He^+ and D^+ Ion Beam Flux on Blister Formation in Niobium and Vanadium	543
S. K. Das, M. Kaminsky	
Depth Distribution and Migration of Implanted Helium in Metal Foils using Proton Backscattering	557
R. S. Blewer	
Blistering of Niobium due to Low Energy Helium Ion Bombardment Investigated by Rutherford Backscattering	573
J. Roth, R. Behrisch, B. M. U. Scherzer	
Radiation Damage and Gas Diffusion in Molybdenum Under Deuteron Bombardment	585
G. M. McCracken, S. K. Erents	
Radiation Blistering After H^+ , D^+ and He^+ Ion Implantation into Surfaces of Stainless Steel, Mo, and Be	597
H. Verbeek, W. Eckstein	
VIII. VOIDS AND IMPLANTATION SIMULATION OF NEUTRON DAMAGE	
A Review of Ion Simulation of High Temperature Neutron Damage and Void Formation	613
G. L. Kulcinski	
Ion Radiation Damage	639
O. S. Oen, J. Narayan, T. S. Noggle	

4 MeV Iron Atom Bombardment of Iron	651
J. R. Beeler, Jr., M. F. Beeler	
Flux (Dose Rate) Effects for 2.8 MeV ⁵⁸ Ni Irradiations of Pure Ni	663
J. E. Westmoreland, J. A. Sprague, F. A. Smidt, P. R. Malmberg	
Heavy Ion-Induced Void Formation in Pure Nickel . .	675
T. D. Ryan, A. Taylor	
The Temperature Dependence of Irradiation Induced Void Swelling in 20% Cold Worked Type 316 Stainless Steel Irradiated with 5 MeV Nickel Ions	687
K. D. Challenger, T. Lauritzen	
AUTHOR INDEX	699
SUBJECT INDEX	701